

DEPARTMENT OF THE NAVY  
FISCAL YEAR (FY) 2000/2001 BIENNIAL BUDGET  
ESTIMATES



19990506 034

JUSTIFICATION OF ESTIMATES  
FEBRUARY 1999

RESEARCH, DEVELOPMENT, TEST &  
EVALUATION, NAVY  
BUDGET ACTIVITY 6

## UNCLASSIFIED

Department of the Navy  
FY 2000 RDT&E Program

Exhibit R-1

APPROPRIATION: 1319n Research, Development, Test and Evaluation, Navy DATE: February 1999

R-1		Thousands of Dollars				Security Classification	
Line Number	Program Element Number	Item Nomenclature	Budget Activity	FY 1998	FY 1999	FY 2000	Classification
131	0604256N	Threat Simulator Development	6	12,254	24,309	29,644	U
132	0604258N	Target Systems Development	6	41,268	53,630	52,265	U
133	0604759N	Major T & E Investment	6	33,564	21,232	42,621	U
134	0605152N	Studies & Analysis Support/Navy	6	6,770	5,031	8,531	U
135	0605154N	Center for Naval Analyses	6	39,346	41,882	43,694	U
136	0605155N	Fleet Tactical Development	6	2,624	2,739	3,103	U
137	0605502N	Small Business Innovative Research (Prior Year Only -- R2/R3 Not Required)	6	124,069	-	-	U
138	0605804N	Technical Information Services	6	6,522	5,995	6,696	U
139	0605853N	Management, Technical, & International Spt	6	15,156	17,625	19,447	U
140	0605856N	Strategic Tech Support (R2/R3 Materials provided in Classified Budget Book)	6	1,897	1,813	2,371	U
141	0605861N	RDT&EN Science & Technology Management	6	52,025	59,868	52,777	U
142	0605862N	RDT&EN Instrumentation Modernization	6	10,219	8,483	9,258	U
143	0605863N	RDT&E,N Ship & Aircraft Support	6	62,178	71,731	73,163	U
144	0605864N	Test and Evaluation Support	6	227,818	242,787	270,992	U
145	0605865N	Operational T&E Capability	6	8,723	9,054	9,172	U
146	0605866N	Navy SEW Support	6	2,395	3,466	2,436	U
147	0605867N	SEW Surveillance/Recon. Support	6	11,316	16,096	12,121	U
148	0605873M	Marine Corps Program Wide Support	6	6,188	12,923	8,198	U
149	0606666N	RDTEEN Interest Payments (Prior Year Only -- R2/R3 Not Required)	6	-	-	-	U
150	0909999N	Cancelled Account Adjustments (Prior Year Only -- R2/R3 Not Required)	6	13,235	-	-	U
Total RDTE Management Support				677,567	598,664	646,489	

## UNCLASSIFIED

Department of the Navy  
FY 2000 RDT&E Program  
Alphabetic Listing

Exhibit R-1

APPROPRIATION: 1319n Research, Development, Test and Evaluation, Navy DATE: February 1999

		Thousands of Dollars				Security Classification
R-1 Line Number	Program Element Number	Item Nomenclature	Budget Activity	FY 1998	FY 1999	FY 2000
150	0909999N	Cancelled Account Adjustments (Prior Year Only -- R2/R3 Not Required)	6	13,235	-	-
135	0605154N	Center for Naval Analyses	6	39,346	41,882	43,694
136	0605155N	Fleet Tactical Development	6	2,624	2,739	3,103
133	0604759N	Major T & E Investment	6	33,564	21,232	42,621
139	0605853N	Management, Technical, & International Spt	6	15,156	17,625	19,447
148	0605873M	Marine Corps Program Wide Support	6	6,188	12,923	8,198
146	0605866N	Navy SEW Support	6	2,395	3,466	2,436
145	0605865N	Operational T&E Capability	6	8,723	9,054	9,172
143	0605863N	RDT&E,N Ship & Aircraft Support	6	62,178	71,731	73,163
142	0605862N	RDT&EN Instrumentation Modernization	6	10,219	8,483	9,258
141	0605861N	RDT&EN Science & Technology Management	6	52,025	59,868	52,777
149	0606666N	RDTEN Interest Payments	6	-	-	-
147	0605867N	(Prior Year Only -- R2/R3 Not Required) SEW Surveillance/Recon. Support	6	11,316	16,096	12,121
137	0605502N	Small Business Innovative Research	6	124,069	-	-
140	0605856N	(Prior Year Only -- R2/R3 Not Required) Strategic Tech Support	6	1,897	1,813	2,371
134	0605152N	(R2/R3 Materials provided in Classified Budget Book) Studies & Analysis Support/Navy	6	6,770	5,031	8,531
132	0604258N	Target Systems Development	6	41,268	53,630	52,265
138	0605804N	Technical Information Services	6	6,522	5,995	6,696
144	0605864N	Test and Evaluation Support	6	227,818	242,787	270,992
131	0604256N	Threat Simulator Development	6	12,254	24,309	29,644
Total RDTE Management Support				677,567	598,664	646,489

Comparison of FY 1998 Financing as reflected  
in FY 1999 Budget with 1998 Financing as  
Shown in the FY 2000 Budget

	(\$ In Thousands)		
	Financing per FY 1999 Budget	Financing Per FY 2000 Budget	Increase (+) or Decrease (-)
Program Requirements (Service Account)	7,879,912	7,887,810	+7,898
Program Requirements (Reimbursable)	110,000	163,008	+53,008
<b>Appropriation (Adjusted)</b>	<b>7,989,912</b>	<b>8,050,818</b>	<b>+60,906</b>

Explanation of Changes in Financing  
(\$ in Thousands)

The Fiscal Year 1998 program has changed since the presentation of the FY 1999 budget as noted below:

1. Program Requirements (Total). There has been a net increase to the appropriation (adjusted) of +\$60,906 as a result of changes in program requirements as noted below.
2. Program Requirements (Service Account). There has been a net increase to the appropriation (adjusted) of +\$7,898, resulting from various changes in program requirements. These changes included rescissions reflected in the FY 99 DoD Appropriations Act (-\$20,500), Line Item Veto Restorals (+\$6,000), and other Congressional Actions (-\$8,000). A number of Internal Reprogrammings were effected which reclassified funding between DoN appropriations to more properly align them into the correct programs for execution: Medical Research Projects (-\$7,278), Tactical Tomahawk (+\$19,600), PMRF Sensors (-\$4,852), F/A-18 (-\$14,855), and ASW Combat System Integration (+\$5,861). Additionally, other transfers included Overseas Contingency Operations (+\$7,500) and Counterdrug Operations (+\$15,613).
3. Program Requirements (Reimbursable). There has been a net increase to the appropriation of \$53,008, as a result of changes in reimbursable program requirements.



Comparison of FY 1998 Program Requirements as reflected  
in the FY 1999 Budget with FY 1998 Program Requirements  
as shown in the FY 2000 Budget

Summary of Requirements (\$ in Thousands)

	Total Program Requirements per FY 1999 Budget	Total Program Requirements per FY 2000 Budget	Increase (+) or Decrease (-)
01 – Basic Research	338,743	331,444	-7,299
02 – Applied Research	493,622	467,359	-26,263
03 – Advanced Technology Development	514,781	518,617	+3,836
04 – Demonstration and Validation (DEM/VAL)	2,219,002	2,222,171	+3,169
05 – Engineering and Manufacturing Development (EMD)	2,227,348	2,153,289	-74,059
06 – RDTE Management Support	551,033	677,567	+126,534
07 – Operational Systems Development	1,535,383	1,517,363	-18,020
<b>Total Fiscal Year Program</b>	<b>7,879,912</b>	<b>7,887,810</b>	<b>+7,898</b>

Explanation by Budget Activity  
(\$ in Thousands)

01. Basic Research (-\$7,299) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (-\$6,086) and other changes in program requirements which required minor reprogrammings (-\$1,213).
02. Applied Research (-\$26,263) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (-\$8,125), other changes in program requirements which required minor reprogrammings (-\$21,118) and the override by Congress of a line item veto for Terfenol-D (+\$3,000).

03. Advanced Technology Development (+\$3,836) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (-\$3,897), other changes in program requirements which required minor reprogrammings (-\$12,011), the override of a line item veto for COTS Airguns (+\$3,000), and the transfer of Medical Research program funds to the Army (-\$7,278).
04. Demonstration and Validation (DEMVAL) (+\$3,169) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (-\$29,846), reductions reflected on the FY 1999 DoD Appropriations Act Rescission for VECTOR (-\$3,000), and other changes in program requirements which required minor reprogrammings, budget activity realignments and accounting updates (+\$36,015).
05. Engineering and Manufacturing Development (EMD) (-\$74,059) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (-\$56,113), transfers to support the Counterdrug Program (+\$15,613), other changes in program requirements which required minor reprogrammings, budget activity realignments and accounting updates (-\$26,019), a transfer to Defense Health Program and the Boy Scouts per a Congressional Supplemental (-\$5,000) and Federal Technology (-\$40), and a FY 1999 DoD Appropriation Act rescissions for Lightweight Torpedo (-\$1,500) and Navigation/ID Systems (-\$1,000).
06. RDTE Management Support (+\$126,534) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (+\$120,551), other changes in program requirements which required minor reprogrammings, budget activity realignments and accounting updates (+\$5,747) and a transfer for Federal Technology (+\$236).
07. Operational Systems Development (-\$18,020) - Changes to this budget activity resulted from a transfer to support the Small Business Innovative Research (SBIR) program (-\$16,484), other changes in program requirements which required minor reprogrammings, budget activity realignments and accounting updates (-\$14,697), and transfers and major reprogrammings for Overseas Contingency Operations (+\$7,500), PMRF Sensors (-\$4,852), Tactical Tomahawk (+\$19,600), Surface ASW Combat Integration (+\$5,861), F/A-18 (-\$14,855), and Federal Technology Transfer (-\$93).

Comparison of FY 1999 Financing as reflected  
in FY 1999 Budget with 1999 Financing as  
Shown in the FY 2000 Budget

	(\$ In Thousands)		
	Financing per FY 1999 Budget	Financing Per FY 2000 Budget	Increase (+) or Decrease (-)
Program Requirements (Service Account)	8,108,923	8,660,809	+551,886
Program Requirements (Reimbursable)	110,000	150,000	+40,000
<b>Appropriation (Adjusted)</b>	<b>8,218,923</b>	<b>8,810,809</b>	<b>+591,886</b>

Explanation of Changes in Financing  
(\$ in Thousands)

The Fiscal Year 1999 program has changed since the presentation of the FY 2000 budget as noted below:

1. Program Requirements (Total). There has been a net increase to the appropriation (adjusted) of +\$591,886, as a result of changes in program requirements as noted below.
2. Program Requirements (Service Account). There has been a net increase to the appropriation (adjusted) of +\$551,886, resulting from changes in program requirements as a result of Congressional appropriation changes in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$4,264)(Section 8034), an undistributed reduction for Contract Advisory and Assistance Services (CAAS)(-\$50,000)(Section 8054), a general reduction for revised economic assumptions (lower inflation rate)(-\$20,000)(Section 8108), and a general undistributed reduction for civilian personnel underexecution (-\$5,000). Specific FY 1999 Congressional adjustments (to start, continue, discontinue, reduce or earmark 177 specific initiatives, including transfers) resulted in a net increase of +\$584,726. Also, appropriation changes include the following reprogrammings, which require Congressional prior approval: ASW & Other Helo Development (CH-60) (+\$9,352); Surface and Shallow Water Mines (+\$8,980); Combat Systems Integration (+\$12,526); Ship Self Defense (+12,672); partially financed by a reduction to Depot Maintenance (-\$11,006). Additionally, FY 1999 includes a transfer for the USACOM Joint Experiments program (+\$15,900), managed by the Navy as DoD executive agent.

3. Program Requirements (Reimbursable). There has been a net increase to the appropriation of +\$40,000, as a result of changes in reimbursable program requirements (+\$40,000).

Comparison of FY 1999 Program Requirements as reflected  
in the FY 1999 Budget with FY 1999 Program Requirements  
as shown in the FY 2000 Budget

Summary of Requirements (\$ in Thousands)

	Total Program Requirements per FY 1999 Budget	Total Program Requirements per FY 2000 Budget	Increase (+) or Decrease (-)
01 – Basic Research	362,679	361,499	-1,180
02 – Applied Research	524,723	566,801	+42,078
03 – Advanced Technology Development	460,725	593,176	+132,451
04 – Demonstration and Validation (DEM/VAL)	2,358,359	2,408,520	+50,161
05 – Engineering and Manufacturing Development (EMD)	2,063,281	2,199,737	+136,456
06 – RDTE Management Support	616,973	598,664	-18,309
07 – Operational Systems Development	1,722,183	1,932,412	+210,229
<b>Total Fiscal Year Program</b>	<b>8,108,923</b>	<b>8,660,809</b>	<b>+551,886</b>

Explanation by Budget Activity  
(\$ in Thousands)

01. Basic Research (-\$1,180) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$7)(Section 8034), an undistributed reduction for civilian personnel underexecution (-\$338), and a general reduction for revised economic assumptions (lower inflation rate)(-\$835)(Section 8108).

02. Applied Research (+\$42,078) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$130)(Section 8034), an undistributed

reduction for Contract Advisory and Assistance Services (CAAS)(-\$1,755)(Section 8054), an undistributed reduction for civilian personnel underexecution (-\$724), and a general reduction for revised economic assumptions (lower inflation rate)(-\$1,313)(Section 8108). Specific FY 1999 Congressional adjustments (to start, continue, discontinue, reduce or earmark 31 specific initiatives, including transfers) resulted in a net increase of +\$46,000.

03. Advanced Technology Development (+\$132,451) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$146)(Section 8034), an undistributed reduction for Contract Advisory and Assistance Services (CAAS)(-\$1,571)(Section 8054), an undistributed reduction for civilian personnel underexecution (-\$516), and a general reduction for revised economic assumptions (lower inflation rate)(-\$1,316)(Section 8108). Specific FY 1999 Congressional adjustments (to start, continue, discontinue, reduce or earmark 33 specific initiatives, including transfers) resulted in a net increase of +\$113,100. Additionally, FY 1999 includes a transfer for the USACOM Joint Experiments program (+\$15,900), managed by the Navy as DoD executive agent. Last, the FY 1999 program is increased by +\$7,000 to fully fund the VECTOR program.

04. Demonstration and Validation (DEM/VAL) (+\$50,161) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$1,228)(Section 8034), an undistributed reduction for Contract Advisory and Assistance Services (CAAS)(-\$5,650)(Section 8054), an undistributed reduction for civilian personnel underexecution (-\$1,234), and a general reduction for revised economic assumptions (lower inflation rate)(-\$5,550)(Section 8108). Specific FY 1999 Congressional adjustments (to start, continue, discontinue, reduce or earmark 46 specific initiatives, including transfers) resulted in a net increase of +\$55,101. Also, appropriation changes include the following reprogrammings, which require Congressional prior approval: Surface and Shallow Water Mines (+\$8,980); Combat Systems Integration (+\$12,526); and CEC (+15,000); partially financed by a reduction to Gun Weapons Systems Technology (-\$11,301) and Hardened Target Munitions (-\$9,827). Additionally, changes in program requirements required minor reprogrammings (-\$6,656).

05. Engineering and Manufacturing Development (EMD) (+\$136,456) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$151)(Section 8034), an undistributed reduction for Contract Advisory and Assistance Services (CAAS)(-\$23,648)(Section 8054), an undistributed reduction for civilian personnel underexecution (-\$878) and a general reduction for revised economic assumptions (lower inflation rate) (-\$5,065)(Section 8108). Specific FY 1999 Congressional adjustments (to

start, continue, discontinue, reduce or earmark 41 specific initiatives, including transfers) resulted in a net increase of +\$136,979. Also, appropriation changes include the following reprogrammings, which require Congressional prior approval: AEGIS Combat System Improvements (-\$5,050); AEGIS Combat Systems Engineering (+\$24,300); AV-8B Aircraft (Engineering) (-\$9,615); ASW and Other Helo Developments (+\$9,352); and Ship Self-Defense (+\$12,672). Additionally, changes in program requirements required minor reprogrammings (-\$1,440).

06. RDTE Management Support (-\$18,309) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$2,292)(Section 8034), an undistributed reduction for Contract Advisory and Assistance Services (CAAS)(-\$3,338)(Section 8054), an undistributed reduction for civilian personnel underexecution (-\$485) and a general reduction for revised economic assumptions (lower inflation rate)(-\$1,394)(Section 8108). Specific FY 1999 Congressional adjustments (to start, continue, discontinue, reduce or earmark 10 specific initiatives, including transfers) resulted in a net decrease of -\$10,800.

07. Operational Systems Development (+\$210,229) - Changes to this budget activity resulted from the following Congressional undistributed reductions reflected in the FY 1999 DoD Appropriations Act. These changes included: an undistributed reduction for Federally Financed Research and Development Centers (FFRDC)(-\$310)(Section 8034), an undistributed reduction for Contract Advisory and Assistance Services (CAAS)(-\$14,038)(Section 8054), an undistributed reduction for civilian personnel underexecution (-\$825) and a general reduction for revised economic assumptions (lower inflation rate)(-\$4,527)(Section 8108). Specific FY 1999 Congressional adjustments (to start, continue, discontinue, reduce or earmark 27 specific initiatives, including transfers) resulted in a net increase of +\$243,346. Also, appropriation changes include the following reprogrammings, which require Congressional prior approval: Depot Maintenance -\$10,922. Additionally, changes in program requirements required minor reprogrammings (-\$2,495).

**UNCLASSIFIED**

**EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0604256N**

**PROGRAM ELEMENT TITLE: Threat Simulator Development**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
E0602 Electronic Warfare Environment Simulation (ECHO)	4,258	14,358	16,176	13,687	18,359	18,670	16,994	17,912	Cont.	Cont.
E0672 Effectiveness of Navy Electronic Warfare Systems (ENEWS)	7,996	9,951	13,468	11,120	13,254	13,540	13,733	14,319	Cont.	Cont.
<b>TOTAL</b>	<b>12,254</b>	<b>24,309</b>	<b>29,644</b>	<b>24,807</b>	<b>31,613</b>	<b>32,210</b>	<b>30,727</b>	<b>32,231</b>	<b>Cont.</b>	<b>Cont.</b>

Quantity of RDT&E Articles: N/A

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This is a continuing program that consolidates the design, fabrication and integration of Naval Electronic Warfare (EW) threat simulators for increased managerial emphasis and coordination. These simulator development efforts provide realistic Developmental and Operational Test and Evaluation (DT&E/OT&E) environments to test Tri-Services EW systems and defensive tactics. These projects develop former Soviet and Free-World Anti-Air and Anti-Ship weapon systems simulators in accordance with the Services requirements.

(U) The E0602 Project, EW Environment Simulation (ECHO) provides airborne system component level Test and Evaluation (T&E) at the Electronic Combat Simulation and Evaluation Laboratory (ECSEL), Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point Mugu, CA. ECHO also provides a secure anechoic closed loop T&E facility for fully integrated, aircraft-installed systems testing at the EW Integrated Systems Test Laboratory (EWISTL) at the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD. Included in this Project is the T&E of airborne systems and tactics in flight, against the open air range at the Electronic Combat Range (ECR) complex located at the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), China Lake, CA.

(U) The E0672 Project, Effectiveness of Navy EW Systems (ENEWS), is a Department of the Navy (DON) unique project that supports testing of Ship Self Defense efforts. ENEWS provides T&E of surface and subsurface shipboard systems and tactics in digitally modeled battle scenarios at the component, fully integrated single ship, multi-ship and full-up multi-platform battle group levels. ENEWS also provides a secure anechoic closed loop T&E facility specifically designed to test shipboard systems at the stand alone component or fully integrated systems level. The last and largest portion of this project addresses the flyable Infrared and Radio Frequency simulators flown on specially configured NP-3D aircraft to provide at-sea open air T&E of systems and tactics. All ENEWS assets are developed and maintained by the Naval Research Laboratory (NRL), Washington, DC.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research, and development use.

**R-1 Line Item 131  
UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, Page 1 of 15)



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**PROJECT NUMBER: E0602**  
**PROJECT TITLE: ECHO**

**PROGRAM ELEMENT: 0604256N**  
**PROGRAM ELEMENT TITLE: Threat Simulator Development**

**BUDGET ACTIVITY: 6**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
E0602 Electronic Warfare Environment Simulation (ECHO)	4,258	14,358	16,176	13,687	18,359	18,670	16,994	17,912	Cont.	Cont.
<b>TOTAL</b>	<b>4,258</b>	<b>14,358</b>	<b>16,176</b>	<b>13,687</b>	<b>18,359</b>	<b>18,670</b>	<b>16,994</b>	<b>17,912</b>	<b>Cont.</b>	<b>Cont.</b>

Quantity of RDT&E Articles: N/A

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The objective of this project is development of necessary simulation facilities and approaches to allow determination of the effectiveness of EW in real world engagement situations and to support the introduction of modern, effective systems into Naval Aviation. The heavy use of test resources by all Services demonstrates the importance of these assets. The Navy has been very successful in executing all of its major programs, and to date has had no major technical problems.

(U) The EW Environment Simulation (ECHO) project is unique in that it is the only program within the Department of Defense (DOD) which develops and provides Naval anti-air warfare threat assets for Testing and Evaluation (T&E) and is a critical part of the Office of the Secretary of Defense (OSD) Test Resource Master Plan. The OSD Master Plan employs many ECHO project resources for planning, analysis, testing and verification of airborne EW equipment.

(U) This project directly supports the T&E requirements of the following programs: High Speed Anti-Radiation Missile, ALR-67(V)2,3,4, ALQ-126B, AN/ALQ-156, EW Advanced Technology (EWAT), Integrated Defensive Electronic Countermeasures (IDECM) (including the Radio Frequency Countermeasures (RFCM), Common Missile Warning System (CMWS), and Advanced Strategic Tactical Expendables (ASTE) subsystem T&E milestones), AVR-2, AAR-47, ALE-50, as well as other Tri-Service EW systems with initial operational capability dates in the 1990's and early 2000's.

(U) This project provides for the development of an Integrated Air Defense T&E capability to be fielded at each of the three sites comprising the Navy's Tri-Center complex: NAVAIRWARCENWPNDIV, China Lake and Point Mugu in CA, and NAVAIRWARCENACDIV, Patuxent River, MD.

**R-1 Line Item 131**  
**UNCLASSIFIED**

**UNCLASSIFIED**  
**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0604256N**      **PROJECT NUMBER: E0602**  
**PROGRAM ELEMENT TITLE: Threat Simulator Development**      **PROJECT TITLE: ECHO**

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- (U) (\$50) Continued Validation and Updates - SIMEVAL.
- (U) (\$145) Continued Validation and Updates - Radar Updates.
- (U) (\$200) Continued Validation and Updates - Validation.
- (U) (\$946) Continued ECHO technical and engineering support.
- (U) (\$220) Continued ECHO System Engineering activity.
- (U) (\$243) Continued ECHO Test Requirements activity.
- (U) (\$1,719) Completed Weapon Systems - JBATS.
- (U) (\$125) Continued Ultra Violet (UV) Stimulator.
- (U) (\$610) Continued I-23 Advanced Capability.

**2. FY 1999 PLAN:**

- (U) (\$50) Continue Validation and Updates - SIMEVAL.
- (U) (\$727) Continue Validation and Updates - Radar Updates.
- (U) (\$450) Continue Validation and Updates - Missile/Gun Updates.
- (U) (\$618) Continue Validation and Updates - Validation.
- (U) (\$1757) Continue ECHO technical and engineering support.
- (U) (\$484) Continue ECHO System Engineering activity.
- (U) (\$1,319) Continue ECHO Test Requirements activity.
- (U) (\$125) Complete UV Stimulator.
- (U) (\$1,419) Complete I-23 Advanced Capability.
- (U) (\$1,272) Initiate/Complete Blue Army Threat Seeker for Missile on Mountain (MOM).
- (U) (\$1,060) Initiate/Complete Infrared (IR)/UV seeker.
- (U) (\$530) Initiate/Complete I-23 additional seeker integration.
- (U) (\$1,272) Initiate/Complete SA-XX seeker for MOM.
- (U) (\$2,120) Initiate/Complete JBATS Enhanced Capabilities.
- (U) (\$900) Initiate/Complete Threat Support System.
- (U) (\$255) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**R-1 Line Item 131**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0604256N**

**PROGRAM ELEMENT TITLE: Threat Simulator Development**

**PROJECT NUMBER: E0602**

**PROJECT TITLE: ECHO**

**3. FY 2000 PLAN:**

- (U) (\$530) Initiate/Complete Infrared/Ultra Violet (IR/UV) Mobile.
- (U) (\$300) Initiate/Complete Ground Truth Sensor.
- (U) (\$2,000) Initiate IR Surface-to-Air Missiles (SAMs) Rate Table.
- (U) (\$1,500) Initiate SUTLER HITCH.
- (U) (\$1,250) Initiate/Complete Infrared Seeker Evaluation Van/Airborne Turret Infrared Measurement System (IRSEV/ATIMS).
- (U) (\$2,918) Initiate RADAR Signal Density Environment (RSDE) Mobile.
- (U) (\$1,000) Initiate I-30 Gray.
- (U) (\$1,500) Initiate I-23 MOBCAP Upgrades
- (U) (\$2,078) Initiate IR/UV/RF Integration.
- (U) (\$100) Continue Validation and Updates - SIMEVAL.
- (U) (\$150) Continue Validation and Updates - Radar and Weapon Simulator Updates.
- (U) (\$400) Continue Validation and Updates - Validation.
- (U) (\$1,200) Continue ECHO technical and engineering support.
- (U) (\$150) Continue ECHO System Engineering activity.
- (U) (\$1,100) Continue ECHO Test Requirements activity.

**R-1 Line Item 131**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

PROJECT NUMBER: E0602  
PROJECT TITLE: ECHO

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604256N  
PROGRAM ELEMENT TITLE: Threat Simulator Development

### (U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	4,385	14,403	17,869
(U) Appropriated Value	4,519	14,403	
(U) Adjustments from PRESBUDG:	-127	-45	-1,693
(U) FY 2000 President's Budget Submit:	4,258	14,358	16,176

### CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 1998 net decrease of -\$127 thousand reflects a Small Business Innovative Research transfer and minor Below Threshold Reprogramming.

The FY 1999 net decrease of -\$45 thousand reflects OSD PBD Adjustments.

The FY 2000 net decrease of -\$1,693 thousand reflects an undistributed reduction of -\$1,110 thousand, -\$161 thousand for the Acquisition Center of Excellence, -\$175 thousand for Full Institutional Funding, -\$1 thousand for NADEP rate adjustments and -\$246 thousand for OSD PBD adjustments.

(U) Schedule: Due to the adjustments in FY 1998, the implementation of the EA-6B ICAP III Test Resource Requirement planning was delayed by 6 months. Due to the adjustments in FY 1999 the EA-6B I CAP III test resource requirement documentation will be delayed 1 month. Due to the adjustment in FY 2000, the development of the second UV/IR Array will be delayed one year to FY 2001.

(U) Technical: Not applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E: Not applicable

R-1 Line Item 131  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0604256N

**PROJECT NUMBER:** E0602

**PROGRAM ELEMENT TITLE:** Threat Simulator Development

**PROJECT TITLE:** ECHO

(U) C. ACQUISITION STRATEGY: The Electronic Warfare Threat Simulator Development program is a Non-ACAT Program with no specific acquisition strategies. The Electronic Warfare Environment Simulation Project, under the Threat Simulator Development Program, is unique in that it is the only program within the Department of Defense dedicated solely to developing and providing Naval threat assets for test and evaluation and is a critical part of the Under Secretary of Defense for Acquisition (USD(A)) annual Electronic Warfare Plan. This plan employs many of the Electronic Warfare Simulation Development project resources for the planning, analysis, testing, and verification of airborne EW equipment. To preclude unwarranted intra-Service and inter-Service duplication, T&E resource requirements are coordinated through the OSD CROSSBOW Committee and the Navy Tri-Center complex for mutual support, cost reduction, and increased test effectiveness. The Navy's Electronic Warfare Test and Evaluation Resource Investment Strategy emphasizes a coordinated analysis and prioritization of Navy EW T&E requirements and implementation of disciplined design-to-cost techniques

(U) D. SCHEDULE PROFILE: Not applicable

**R-1 Line Item 131**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROJECT NUMBER:  
PROJECT TITLE:

E0602  
ECHO

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>			
JBATS IH (HDW/SW Dev, Sys Integ)	C-CPFF	EWAN/NSMA, China Lake, CA	2,558	500					3,058	3,058
ICAP III, TADIROM, JETS (Rqmts)	C-CPFF	EWAN/NSMA, China Lake, CA		1,000	Mar-99	1,000	Mar-00	1,000	3,000	3,000
I-23 (HDW/SW Dev, Sys Integ)	C-CPIF	CTA, China Lake, CA	2,143	1,000	Jul-99	1,000	Jul-00		4,143	4,143
IR SAMs RT(HDW/SW Dev, Sys Integ)	C-CPFF	GTRI/NSMA, Atlanta, GA				1,500	Mar-00	800	2,300	2,300
RSDE MOB (HDW/SW Dev. Sys Integ)	C-CPAF	RPI, China Lake, CA				2,500	Jan-00	1,400	3,900	3,900
Award Fee						75		42	117	117
IR TGT (HDW/SW Dev, Sys Integ)	C-CPFF	TBD						4,700	4,700	4,700
HDW/SW Dev, Systems Engineering	WX	NAWC-WD, China Lake, CA	36,604	5,970		6,174		CONT	CONT	
Miscellaneous	Various		13,440	5,618		3,912		CONT	CONT	
<b>Subtotal Product Development</b>			<b>54,745</b>	<b>14,088</b>		<b>16,161</b>		<b>CONT</b>	<b>CONT</b>	

Remarks: Award fee totals 3% of contract.

Not Applicable

**Subtotal Support**

Remarks

Not Applicable

**Subtotal Test & Evaluation**

Remarks:

R-1 Line Item 131  
UNCLASSIFIED

# UNCLASSIFIED

DATE: February 1999

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROJECT NUMBER: E0602  
PROJECT TITLE: ECHO

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date		

Travel

WX NADEP, Jax, FL

43

15

15

CONT

CONT

Subtotal Management

SBIR Assessment

Remarks

43

15

15

CONT

CONT

Total Cost

\$54,788

\$14,358

\$16,176

CONT

CONT

R-1 Line Item 131  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604256N

PROGRAM ELEMENT TITLE: Threat Simulator Development

PROJECT NUMBER: E0672

PROJECT TITLE: ENEWS

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
E0672 Effectiveness of Navy Electronic Warfare Systems (ENEWS)	7,996	9,951	13,468	11,120	13,254	13,540	13,733	14,319	
<b>TOTAL</b>	7,996	9,951	13,468	11,120	13,254	13,540	13,733	14,319	Cont.

Quantity of RDT&E Articles: N/A

A.(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The objective of the Effectiveness of Navy EW Systems (ENEWS) project is the development and application of necessary simulation assets to determine the effectiveness of EW in real-world engagement situations and primarily supports the introduction of modern, effective shipboard EW systems, and tactics for the surface Navy. The heavy use of ENEWS resources by NAVSEA and other developers speaks to the overall importance of these assets. The project provides support for EW system design, Development Test (DT), Operational Test (OT), and the development of tactics. Its quick reaction capabilities have had great impact on crisis situations such as the Falklands conflict, the Iran Harpoon threat, the Persian Gulf crisis, and Operation Desert Shield/Storm.

(U) The primary threat to surface ships is Anti-Ship Missile (ASM) systems. The ENEWS project is unique in that it is the only project within the Department of Defense (DOD) dedicated to developing and providing assets to test and evaluate the effectiveness of shipboard EW systems and tactics against Anti-Ship Missiles (ASMs).

(U) The ENEWS project is a critical part of the OSD Test Resource Master Plan. This plan employs many of the ENEWS assets for planning, analysis, testing and verification of shipboard EW systems and tactics. As part of its normal activities, ENEWS will provide T&E/DT&E/OT&E support to Combat Ship Systems Qualification Tests (CSSQT) for CG-47, DDG-51 and CV/CVN class ships as well as SLQ-32 PHASE improvements. DT and OT support will be provided for the SLQ-32 PHASE improvements, R17-0X (NULKA, Giant IR Decoys), the phase-in of ALEWS in FY-00, Rapid Anti-ship Integrated Defense System (RAIDS), all TORCH tests, Advanced IR Decoys, Decoy placement (Littoral), Ship IR Signature, AN/ALQ-99 ADVCAP, Multiband Anti-ship Cruise Missile Defense Tactical EW System (MATES), High Power Microwave (HPM) Program, and other Ship Self-Defense initiatives including RDT&E 6.3A Advanced Technology Demonstrations and 6.2 EW Technology Base programs. ENEWS assets are also employed to test the effectiveness of NATO ships EW systems.

R-1 Line Item 131  
UNCLASSIFIED



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0604256N**

**PROGRAM ELEMENT TITLE: Threat Simulator Development**

**PROJECT NUMBER: E0672**

**PROJECT TITLE: ENEWS**

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- (U) (\$550) Continued COMSIM System Readiness.
- (U) (\$525) Continued COMSIM Scenario Implementation, Database & Model Updates (COMPLETED 5 Models)
- (U) (\$380) Continued COMSIM System Engineering, Scenario Generator (COMPLETED CVX RF Vulnerability) & Database Development.
- (U) (\$125) Continued COMSIM Electronic Warfare Simulation. (COMPLETED; MM-38 Component Classes)
- (U) (\$70) Continued COMSIM Systems, Force on Force Simulation & Visualization Development (COMPLETED; ISAP tools, 2-D scope & strip chart).
- (U) (\$2,374) Continued RFSIM Simulator Readiness. (COMPLETED; Installation of new RF attenuators and Phase Shifters, Layout/installation of equipment into 20G racks for flyable Simulators, development of SCRAMNET control TAFS, Installation of 1<sup>st</sup> phase for new video system)
- (U) (\$988) Continued RFSIM Simulator Upgrades. (COMPLETED; range tracker upgrade and characterization for the HOTEL Simulator, Operational verification of ROMEO Simulator, COMPLETED assembly and check out of control panel for a new ARM seeker Simulator)
- (U) (\$500) Initiated RFSIM Anti-Ship Missile Simulator Development.
- (U) (\$212) Continued RFSIM Laboratory Systems Development.
- (U) (\$300) Continued RFSIM Field Systems Development & Data Analysis. (COMPLETED design for a "virtual strip chart" data viewer – IOC for GTRS)
- (U) (\$1,280) Continued IRSIM Readiness. (COMPLETED; 20G rack for Victor, Foxtrot shore side simulator)
- (U) (\$320) Continued IRSIM Flyable Simulator Upgrades. (COMPLETED; display & data recording system for VICTOR II Simulator)
- (U) (\$206) Continued IRSIM Flyable Systems Development. (COMPLETED; Integration of Mid-Wave detector with VICTOR Simulator)
- (U) (\$166) Continued Program Engineering & Technical Support.

**R-1 Line Item 131  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0604256N

**PROJECT NUMBER:** E0672

**PROGRAM ELEMENT TITLE:** Threat Simulator Development

**PROJECT TITLE:** ENEWS

**2. FY 1999 PLAN:**

- (U) (\$626) Continue COMSIM System Readiness.
- (U) (\$340) Continue COMSIM Scenario Implementation, Database Updates
- (U) (\$252) Initiate COMSIM Anti Ship Missile Updates (4 Classified Systems)
- (U) (\$628) Initiate COMSIM Development of Anti Ship Missile Engagement Simulation & Environment Generator
- (U) (\$2,226) Continue RFSIM Simulator Readiness.
- (U) (\$170) Continue RFSIM Simulator Upgrades.
- (U) (\$1057) Continue RFSIM Anti-Ship Missile Simulator Upgrade.
- (U) (\$186) Continue RFSIM Dual RF/ARM Seeker Simulator Development
- (U) (\$268) Complete RFSIM Validation (3 simulators)
- (U) (\$399) Continue RFSIM CTS Target Fidelity Development.
- (U) (\$181) Complete RFSIM Ground Truth Reference System.
- (U) (1,407) Continue IRSIM Readiness
- (U) (\$283) Initiate IRSIM FOXTROT Simulator Upgrades (2 Classified Systems).
- (U) (\$187) Continue IRSIM VICTOR Simulator Upgrades (2 Classified Systems).
- (U) (\$52) Complete IRSIM Validation Report (1 System).
- (U) (\$51) Continue IRSIM MEIR II System Development.
- (U) (\$177) Initiate IRSIM FOXTROT Simulator Phase II Development.
- (U) (\$86) Continue IRSIM VICTOR Simulator Development.
- (U) (\$99) Initiate IRSIM Lab/Field Systems Development.
- (U) (\$1,227) Continue ENEWS Plans & Programs.
- (U) (\$49) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**R-1 Line Item 131**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0604256N**      **PROJECT NUMBER: E0672**  
**PROGRAM ELEMENT TITLE: Threat Simulator Development**      **PROJECT TITLE: ENEWS**

### 3. FY 2000 PLAN:

- (U) (\$625) Continue COMSIM System Readiness.
- (U) (\$290) Continue COMSIM Scenario Implementation, Database Updates
- (U) (\$386) Complete COMSIM 2 & Continue 2 COMSIM Anti Ship Missile Updates (Classified Systems)
- (U) (\$315) Initiate COMSIM Anti-Ship Missile Targets (Signature and Motion)
- (U) (\$1,055) Continue COMSIM Development of Anti Ship Missile Engagement Simulation & Environment Generator
- (U) (\$3,150) Continue RFSIM Simulator Readiness.
- (U) (\$400) Continue RFSIM Simulator Upgrades.
- (U) (\$1,400) Continue RFSIM Anti-Ship Missile Simulator Development.
- (U) (\$300) Complete RFSIM Validation (3 simulators)
- (U) (\$356) Complete RFSIM Dual RF/ARM Seeker Simulator Development
- (U) (\$605) Initiate RFSIM CTS 3 Axis Flight Simulator & Laboratory Systems Development.
- (U) (\$649) Continue RFSIM CTS Target Fidelity Development.
- (U) (\$1,078) Continue IRSIM Readiness.
- (U) (\$254) Complete IRSIM FOXTROT Simulator Upgrades (2 Classified Systems).
- (U) (\$340) Complete IRSIM VICTOR Simulator Upgrades (2 Classified Systems).
- (U) (\$75) Initiate IRSIM Littoral Warfare Simulations.
- (U) (\$54) Complete IRSIM Validation Report (1 System).
- (U) (\$40) Continue IRSIM MEIR II System Development.
- (U) (\$181) Continue IRSIM FOXTROT Simulator Phase II Development.
- (U) (\$500) Initiate IRSIM VICTOR Simulator Phase II Development.
- (U) (\$80) Initiate IRSIM Flyable MEIR II Simulator Development.
- (U) (\$170) Complete IRSIM Lab/Field Systems Development.
- (U) (\$181) Initiate IRSIM Littoral Warfare System Development.
- (U) (\$984) Continue ENEWS Plans & Programs

**R-1 Line Item 131**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**PROJECT NUMBER: E0672**  
**PROJECT TITLE: ENEWS**

**PROGRAM ELEMENT: 0604256N**  
**PROGRAM ELEMENT TITLE: Threat Simulator Development**

**BUDGET ACTIVITY: 6**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	8,094	9,997	13,430
(U) Appropriated Value	8,094	9,997	
(U) Adjustments from PRESBUDG:	-98	-46	38
(U) FY 2000 President's Budget Submit:	7,996	9,951	13,468

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: The FY 1998 decrease of -\$98 thousand reflects a -\$83 thousand Budget Submitting Office (BSO) realignment, -\$8 thousand for a Below Threshold Reprogramming adjustment and -\$7 thousand for other OSD adjustments.

The FY 1999 decrease of -\$46 thousand reflects a -\$46 thousand OSD PBD adjustment.

The FY 2000 net increase of \$38 thousand reflects a -\$129 thousand for Acquisition Center of Excellence adjustment and a +\$277 thousand rate adjustment for Naval Research Lab and Naval Aviation Depots, +\$85 thousand for a civilian pay rate adjustment and -\$195 thousand for non pay inflation.

(U) Schedule: Not applicable.

(U) Technical: Not applicable

**R-1 Line Item 131**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0604256N

**PROGRAM ELEMENT TITLE:** Threat Simulator Development

**PROJECT NUMBER:** E0672

**PROJECT TITLE:** ENEWS

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E: Not applicable

(U) D. ACQUISITION STRATEGY: The Electronic Warfare Threat Simulator Development program is a Non-ACAT Program with no specific acquisition strategies. The Effectiveness of Navy Electronic Warfare Systems Project, under the Threat Simulator Development Program, is unique in that it is the only program within the Department of Defense dedicated solely to developing and providing Anti-Ship Cruise Missile threat assets for test and evaluation and is a critical part of the Under Secretary of Defense for Acquisition (USD(A)) annual Electronic Warfare Plan. This plan employs many of the Electronic Warfare Simulation Development project resources for the planning, analysis, testing, and verification of surface EW equipment. The Navy's Electronic Warfare Test and Evaluation Resource Investment Strategy emphasizes a coordinated analysis and prioritization of Navy EW T&E requirements and implementation of disciplined design-to-cost techniques.

(U) E. SCHEDULE PROFILE: Not applicable

**R-1 Line Item 131**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROJECT NUMBER:  
PROJECT TITLE:

E0672  
ENEWS

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Cost to Complete	Total Cost	Target Value of Contract
			FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date			

HDW/SW Dev, Sys Eng/Integ

WX NRL, Wash DC

9,887

13,453

CONT

### Subtotal Project Development

\$137,543

\$13,453

CONT

Remarks

Not Applicable

### Subtotal Support

0

0

0

0

0

Remarks

Not Applicable

### Subtotal Test & Evaluation

0

0

0

0

0

Remarks

Travel

WX NADEP Jax, FL

43

15

15

CONT

### Subtotal Management

SBIR Assessment

43

15

15

CONT

Remarks

### Total Cost

\$137,586

\$9,951

\$13,468

CONT

## R-1 Line Item 131 UNCLASSIFIED

**UNCLASSIFIED**  
**EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0604258N**

**PROGRAM ELEMENT TITLE: Target Systems Development**

**( U ) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
A0609 Aerial Target Systems Development	26,787	35,828	29,628	43,772	38,378	32,239	17,161	17,245	Cont.	Cont.
A0610 Weapon Systems T&E Development/Procurement	13,586	16,850	21,536	9,285	14,215	13,812	29,309	31,021	Cont.	Cont.
Quantity of RDT&E Articles	5	6	8	3	3	2	7	7		
20612 Surface Targets Development	895	952	1,101	1,183	1,209	1,227	1,246	1,298	Cont.	Cont.
Quantity of RDT&E Articles	1	1	1	1	1	1	1	1		
<b>TOTAL</b>	<b>41,268</b>	<b>53,630</b>	<b>52,265</b>	<b>54,240</b>	<b>53,802</b>	<b>47,278</b>	<b>47,716</b>	<b>49,564</b>	<b>Cont.</b>	<b>Cont.</b>

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This program element funds the development and procurement of aerial and surface targets and associated Target Augmentation and Auxiliary Systems (TA/AS) necessary to duplicate or simulate threat characteristics in support of weapons systems test and evaluation and fleet training. Included within this program element are development of: Subsonic Subscale Aerial Target (SSAT), various TA/AS, the Aerial Target Launch Ship (ATLS) for VANDAL, Theater Ballistic Missile Target (TBMT), Supersonic Sea Skimming Target (SSST), Navy Full Scale Aerial Target (FSAT) for conversions, the joint FSAT, surface targets for test and evaluation, surface towed targets, improved target control system, and an anti-radiation missile target. This program element also includes Vandal (EER) testing and procurement of TA/AS Vector Scoring.

**R-1 Item No. 132**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0604258N**      **PROJECT NUMBER: A0609**  
**PROGRAM ELEMENT TITLE: Target Systems Development**      **PROJECT TITLE: Aerial Targets Systems Development**

**( U ) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
<u>A0609 Aerial Targets Systems Development</u>	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
	26,787	35,828	29,628	43,772	38,378	32,239	17,161	17,245	Cont.	Cont.

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** Aerial Target Systems and associated target augmentation and auxiliary systems are developed in response to the need to test and provide training for Joint strike and littoral warfare systems required to defend fleet surface and air units in a hostile environment. The threat envelope covered extends from the surface to 100K feet for speeds in the low subsonic range to MACH 4.

**( U ) PROGRAM ACCOMPLISHMENTS AND PLANS:**

1. FY 1998 ACCOMPLISHMENTS:
  - (U) (\$2,966) SSAT development
  - (U) (\$904) Continued Target/Threat Characterization (TCC) (formally M&S).
  - (U) (\$1,594) Continued TA/AS development for Aerial Targets.
  - (U) (\$3,641) Continued ATLS.
  - (U) (\$2,566) Continued SSST development.
  - (U) (\$13,753) Initiated development of the TBMT as a target variant
  - (U) (\$1,363) Continued target support

**R-1 Item No. 132**  
**UNCLASSIFIED**



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0604258N**

**PROJECT NUMBER: A0609**

**PROGRAM ELEMENT TITLE: Target Systems Development**

**PROJECT TITLE: Aerial Targets Systems Development**

**2. (U) FY 1999 PLAN:**

- (U) (\$ 7,000) Conduct Concept Studies on SSAT.
- (U) (\$ 1,285) Continue TTC.
- (U) (\$ 3,408) Continue TA/AS development for aerial targets.
- (U) (\$ 1,945) Complete ATLS.
- (U) (\$ 7,320) Continue SSST development and initiate development of follow-on SSST
- (U) (\$12,945) Complete development of the TBMT as a target variant.
- (U) (\$ 1,147) Continue target support.
- (U) (\$ 778) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. (U) FY 2000 PLAN:**

- (U) (\$15,767) Initiate SSAT development.
- (U) (\$ 870) Continue TTC.
- (U) (\$ 2,003) Continue TA/AS development.
- (U) (\$ 8,098) Continue SSST development.
- (U) (\$ 2,890) Continue target support.

**R-1 Item No. 132**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0604258N      PROJECT NUMBER: A0609  
 PROGRAM ELEMENT TITLE: Target Systems Development      PROJECT TITLE: Aerial Targets Systems Development

### ( U ) B. PROGRAM CHANGE SUMMARY

	FY 1998	FY 1999	FY 2000
( U ) FY 1999 President's Budget:	32,074	36,707	23,803
( U ) Appropriated Value:	33,321	36,707	
( U ) Adjustments from 1999 President's Budget:	-5,287	-879	5,825
( U ) FY 2000 President's Budget Submit:	26,787	35,828	29,628

### CHANGE SUMMARY EXPLANATION:

( U ) Funding: Decreases in FY98 are for SBIR assessment -\$658 thousand, reprogrammings for higher Navy priorities -\$3,694 thousand and payment of canceled account adjustments -\$935 thousand. Decreases of \$879 thousand in FY1999 are for Congressional undistributed reductions. The net increase of \$5,825 thousand in FY2000 is for additional funding of SSAT +6,616 thousand which is partially offset by reductions of \$429 thousand for non pay inflation and \$362 thousand for minor program adjustments.

( U ) Schedule: Not applicable

( U ) Technical: Not applicable

R-1 Item No. 132  
 UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604258N

PROJECT NUMBER: A0609

PROGRAM ELEMENT TITLE: Target Systems Development

PROJECT TITLE: Aerial Targets Systems Development

### (U) C. OTHER PROGRAM FUNDING SUMMARY

Appn WPN #13	FY 1998 <u>Budget</u> 61,409	FY 1999 <u>Budget</u> 71,682	FY 2000 <u>Estimate</u> 21,177	FY 2001 <u>Estimate</u> 55,711	FY 2002 <u>Estimate</u> 57,919	FY 2003 <u>Estimate</u> 75,065	FY 2004 <u>Estimate</u> 91,074	FY 2005 <u>Estimate</u> 93,237	To Complete Cont.
<u>Related RDT&amp;E</u>									
(U) P.E. 0204136N (F/A-18 Squadrons)									
(U) P.E. 0205667N (F-14 Upgrade)									
(U) P.E. 0207161N ( Tactical Air Intercept)									
(U) P.E. 0207163N ( Advanced Medium Range Air-to-Air Missile)									
(U) P.E. 0604366N (TBMT Improvement)									
(U) P.E. 0604372N ( New Threat Upgrade)									
(U) P.E. 0604755N ( Ship Self Defense)									

(U) D. ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.

(U) E. SCHEDULE PROFILE: Not applicable

R-1 Item No. 132  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604258N

PROJECT NUMBER: A0609  
PROJECT TITLE: Aerial Targets Systems Development

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Cost to Complete	Total Cost	Target Value of Contract
				FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date			
SSAT 1)	TBD	Competitive	NA	5400	3/99	14000	12/99	59500	78900	78900
ATLS	S/CPFF	Allied Signal Teterboro, NJ	3185	1289	2/99	0	NA	0	4474	4474
SSST ( Precision Guidance)	CPFF	McDonnell Douglas, St Louis, Mo	NA	2500	3/99	0	NA	0	2500	2500
SSST 2)	FF	Competitive	0	3500	5/99	7000	2/00	10453	20953	20953
SSST/TBMT	CPIF	Raytheon Tucson, AZ	10538	2280	6/99	0	NA	0	12818	12818
TBMT Contract Award Fees	CPIF	same as above	880	62						
Miscellaneous contracts	Various	Various	6734	11470	Various	1839	Various	Cont.	Cont.	Cont.
Miscellaneous (NAWC)	WX/RXs	Various	39634	3410	Various	2633	Various	Cont.	Cont.	Cont.
<b>Subtotal Project Development</b>			<b>60971</b>	<b>29911</b>		<b>25472</b>		<b>Cont.</b>	<b>Cont.</b>	<b>Cont.</b>

### Remarks:

- 1) Details at a higher classification. Contact Mr. Pic, N89B, at (703) 697-4840 for further details.
- 2) The decision was made to go to competitive contract on the SSST in FY99. Extended Range SSST is one of the possible candidates. The competitive contract will be renamed Supersonic Sea Skimming Target (SSST), Threat "C".

Miscellaneous (HQ/NAWC)  
**Subtotal Support**

Various 304 367 301 Various Cont. Cont.  
**304 367 301**

R-1 Item No. 132  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

### BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604258N

PROJECT NUMBER: A0609

PROJECT TITLE: Aerial Targets Systems Development

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Cost to Complete	Total Cost	Target Value of Contract
				Cost	Date	Cost	Date			

Miscellaneous (NAWC)  
Subtotal Test & Evaluation

Remarks

Miscellaneous (HQ/NAWC/NADEPs)  
Subtotal Management  
SBIR Assessment  
Remarks

Total Cost

R-1 Item No. 132  
UNCLASSIFIED

**UNCLASSIFIED**  
**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

DATE: February 1999

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0604258N**

**PROJECT NUMBER: A0610**

**PROGRAM ELEMENT TITLE: Target Systems Development**

**PROJECT TITLE: Weapon System T&E Development /Procurement**

( U ) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
<u>A0610 Weapon Systems T &amp; E Development/Procurement</u>	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
<b>TOTAL</b>	13,586	16,850	21,536	9,285	14,215	13,812	29,309	31,021	Cont.	Cont.
Quantity of RDT&E Articles	5	6	8	3	3	2	7	7	Cont.	Cont.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the development and procurement of aerial targets used solely for test and evaluation of Naval Weapons Systems which closely replicate current and projected threats to fleet units in the Joint Strike and the Littoral Warfare environments. This replication must include characteristics related to size, performance envelope, and electromagnetic and infrared signatures. As threats change, changes must be made to keep the targets as threat representative as possible. This is done in response to changes in the requirements of the developers of naval weapons systems.

( U ) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. ( U ) FY 1998 ACCOMPLISHMENTS:

- ( U ) (\$ 10,423) Provided engineering and logistics support for the FSAT program, including Aviation Depot Level Repairables (AVDLR), procurement of kit material and conversion of five F-4S aircraft into FSAT targets.
- ( U ) (\$ 1,084) Continued Vector Scorer type T &E TA/AS development/procurement /support.
- ( U ) (\$ 2,020) Continued VANDAL support .
- ( U ) (\$ 59) Continued target support.

**R-1 Item No. 132**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0604258N**

**PROGRAM ELEMENT TITLE:** Target systems Development

**PROJECT NUMBER:** A0610

**PROJECT TITLE:** Weapon System T & E Development  
/Procurement

**2. (U) FY 1999 PLAN:**

- (U) (\$ 15,178) Program, engineering and logistic support for the FSAT, including Aviation Depot Level Repairables (AVDLR), procurement of kit material and conversion of six F-4S aircraft into FSAT targets.
- (U) (\$ 1,289) Continue T & E TA/AS Vector Scoring development/procurement/support.
- (U) (\$ 180) Continue VANDAL support.
- (U) (\$ 135) Continue Target Support
- (U) (\$ 68) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. (U) FY 2000 PLAN:**

- (U) (\$ 20,016) Program, engineering and logistic support for the FSAT, including Aviation Depot Level Repairables (AVDLR), procurement of kit material and conversion of eight F-4S aircraft into FSAT targets.
- (U) (\$ 1,102) Continue T & E TA/AS Vector Scoring development/procurement/support.
- (U) (\$ 195) Continue VANDAL support
- (U) (\$ 223) Continue Target Support

**R-1 Item No. 132**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604258N

PROGRAM ELEMENT TITLE: Target Systems Development

PROJECT NUMBER: A0610

PROJECT TITLE: Weapon System T & E Development /Procurement

### (U) B. PROGRAM CHANGE SUMMARY

	FY 1998	FY 1999	FY 2000
(U) FY 1999 President's Budget:	10,743	17,056	28,469
(U) Appropriated Value:	11,143	17,056	
(U) Adjustments from 1999 President's Budget:	2,843	-206	-6,933
(U) FY 2000 President's Submit:	13,586	16,850	21,536

### CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY98 net increase of +\$2,843 thousand is due to an increase through a reprogramming of +\$3,697 thousand for the Vector Scoring and Vandal programs. This increase is partially offset by reductions of \$780 thousand for higher Navy priorities, -\$62 thousand for the SBIR assessment and -\$12 thousand for payment of cancelled account adjustments. FY99 net decrease of \$206 thousand is due to Congressional undistributed reductions. FY2000 decrease of \$6,933 thousand is the result of a realignment of -\$5,688 thousand for SSAT, followed by decreases of \$875 thousand for Navy Working Capital Fund (NWCFF) rate adjustments, -\$317 thousand for non pay purchases inflation, and -\$53 thousand for minor program adjustments.

- (U) Schedule: Not applicable
- (U) Technical: Not applicable

### C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

#### Related RDT&E

- (U) P.E. 0204136N (F/A-18 Squadrons)
- (U) P.E. 0205667N (F-14 Upgrade)
- (U) P.E. 0207161N (Tactical Air Intercept)
- (U) P.E. 0207163N (Advanced Medium Range Air-to-Air Missile)
- (U) P.E. 0604366N (Standard Missile Improvement)
- (U) P.E. 0604372N (New Threat Upgrade)
- (U) P.E. 0604755N (Ship Self Defense)

D. (U) ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.

E. (U) SCHEDULE PROFILE: Not applicable

R-1 Item No. 132  
UNCLASSIFIED



# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604258N

PROJECT NUMBER: A0610  
PROJECT TITLE: Weapon System T & Development /Procurement

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
				FY 1999 Cost	FY 1999 Date	FY 2000 Cost	FY 2000 Date				
Vector Scorer Development	FF	Competitive	0	555	7/99	700	7/00	Cont.	Cont.	Cont.	1,322
TA/AS - ARMS Upgrade	FFP	Cambridge Consultants, UK	910	262	7/99	150	7/00	0	1,322	1,322	1,322
Miscellaneous Contracts	Various	Various	20,829	0		0					
Miscellaneous (NAWC/NADEP)	WX/RX	Various	53,047	14,942	Various	19,322	Various	Cont.	Cont.	Cont.	
<b>Subtotal Product Development</b>			<b>74,786</b>	<b>15,759</b>		<b>20,172</b>		<b>Cont.</b>	<b>Cont.</b>	<b>Cont.</b>	

Subtotal Test & Evaluation

0 0 0 0 0 0

Remarks:

Miscellaneous (NAWC/NADEP)  
Subtotal Management

WX/RX Various 3,107 341 Various 455 Various 455 Cont. Cont.

Miscellaneous (NAWC/NADEP)  
Subtotal Support

WX/RX Various 575 682 Various 909 Various 909 Cont. Cont.

Remarks:  
SBIR Assessment  
Total Cost

78,468 16,850 21,536 Cont. Cont.

R-1 Item No. 132  
UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification  
(Exhibit R-2a, Page 11 of 13)

# UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY	Program Element Name & No.	Project Name and Number.
RDT&E/BA6	0604258N/Target Systems Development	20612/Surface Targets Development

COST (\$ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total P.E. Cost										
20612/Surface Targets Development	895	952	1,101	1,183	1,209	1,227	1,246	1,298	cont.	cont.
Quantity of RDT&E Articles & cost	1	1	1	1	1	1	1	1		

A. Mission Description and Budget Item Justification: This project develops seaborne targets systems and their related target augmentation systems in support of air-to-surface and surface-to-surface weapons test and evaluation and fleet training.

## FY 1998 ACCOMPLISHMENTS:

- (\$66) Continued Requirements Study Update. Issued 1998 Needs and Solutions Analysis. Commenced the Seaborne Targets Requirements Advisory Group (STRAG). (Oct 97-Sep 98)
- (\$146) Continued Weapons System/Emitter, TAS Upgrade. (Oct 97-Sep 98)
- (\$25) Continued Target/Threat Characterization and Validation (formally Modeling and Simulation). Determined HSMST Radar Cross Section (RCS). (Oct 97-Sep 98)
- (\$438) Continued Command and Control System Upgrade Development. Procured and tested two prototype Seaborne Target Portable Command and Control Units (PCCU). (Oct 97-Sep 98)
- (\$220) Procured prototype off-the-shelf boat for testing and evaluation as a 50-knot HSMST. (Oct 97-May 98)

## FY 1999 PLAN:

- (\$70) Continue Requirements Study Update. (Oct 98-Sep 99)
- (\$140) Continue Weapons System/Emitter, TAS Upgrade. (Oct 98-Sep 99)
- (\$67) Continue Target/Threat Characterization and Validation (formally Modeling and Simulation). (Oct 98-Sep 99)
- (\$352) Continue Command and Control System Upgrade Development. (Oct 98-Sep 99)
- (\$120) Commence development of Target Scoring System. (Oct 98-Sep 99)
- (\$200) Procure prototype off-the-shelf boat for testing and evaluation of enhanced HSMST. (Oct 98-Sep 99)
- (\$3) Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

## FY 2000 PLAN:

- (\$68) Continue Requirements Study Update. (Oct 99-Sep 00)
- (\$147) Continue Weapons System/Emitter, TAS Upgrade. (Oct 99-Sep 00)
- (\$100) Continue Target/Threat Characterization and Validation. (Oct 99-Sep 00)
- (\$202) Continue Command and Control System Upgrade Development. (Oct 99-Sep 00)
- (\$295) Continue development of Target Scoring System. (Oct 99-Sep 00)
- (\$289) Procure prototype off-the-shelf boat for testing and evaluation of enhanced HSMST. (Oct 99-Sep 00)

R-1 Item No. 132  
UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification  
(Exhibit R-2a, Page 12 of 13)

# UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification		Date: February 1999
APPROPRIATION/BUDGET ACTIVITY	Program Element Name & No.	Project Name and Number.
RDT&E/BA6	0604258N/Target Systems Development	20612/Surface Targets Development

## FY 2001 PLAN:

- (\$65) Continue Requirements Study Update. (Oct 00-Sep 01)
- (\$141) Continue Weapons System/Emitter, TAS Upgrade. (Oct 00-Sep 01)
- (\$192) Continue Target/Threat Characterization and Validation. (Oct 00-Sep 01)
- (\$195) Continue Command and Control System Upgrade Development. (Oct 00-Sep 01)
- (\$300) Continue development of Target Scoring System. (Oct 00-Sep 01)
- (\$290) Procure prototype off-the-shelf boat for testing and evaluation of enhanced HSMST. (Oct 00-Sep 01)

## B. Program Change Summary:

FY 1999 President's Budget:

Appropriated Value:

Adjustment to FY 1998 Appropriated Value/

FY 1999 President's Budget:

Undistributed reductions

FY 2000/01 PRES Budget Submit:

Funding: Impact is minor.

Schedule: Not applicable

Technical: Not applicable

	FY 1998	FY 1999	FY 2000	FY 2001
	888	1,037	1,132	1,217
	944	1,037		
	-49	-85	-31	-34
	895	952	1,101	1,183

## C. Other Program Funding Summary

	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
OPN Line 551800 Unmanned Seaborne Targets	2,218	1,946								
OPN Line 545500 ASW Range Support Equipment			6,407							

(U) Related RDT&E: Not applicable

D. Acquisition Strategy: Not applicable

E. Schedule Profile: Not applicable

cont.

cont.

R-1 Item No. 132  
UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification  
(Exhibit R-2a, Page 13 of 13)

# EXHIBIT R-2, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0604759N      PROJECT NUMBER: W2195  
 PROGRAM ELEMENT TITLE: Major T&E Investment      PROJECT TITLE: T&E Investment

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2195 Test and Evaluation Investment										
	*33,564	**21,232	42,621	42,461	43,955	52,741	53,506	55,696	Cont.	Cont.
TOTAL	33,564	21,232	42,621	42,461	43,955	52,741	53,506	55,696	Cont.	Cont.

- \* FY98 estimate reflects a \$3M Congressional Add for East Coast Communications effort.
- \*\* FY99 estimate reflects a \$4M Congressional Add for East Coast Communications effort and to be executed under project unit W2447.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project improves visibility of Test and Evaluation (T&E) resources across the Services for Major T&E investment funding. These funds correct major deficiencies, improve T&E capabilities, and increase T&E support effectiveness. The T&E Investment project provides support for the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTEC), Andros Island, Bahamas; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point MUGU, CA and China Lake, CA; and the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: Budget Activity 6: This program is funded under Research, Development, Test and Evaluation management support because it supports the operations and installations required for general research and development.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- (U) FY 1998 ACCOMPLISHMENTS:
  - (\$9,071) NAVUNSEAWARCEN DET AUTEC. Completed the Advanced Noise Measurement project. Continued the Tracking Hydrophone Replacement project. Continued Instrumentation Component Replacement (ICR) efforts.
  - (\$17,002) NAVAIRWARCENWPNDIV. Continued to modernized core instrumentation capability. Initiated upgrade of eight (11,12,13,14,15, 16,17,18) Kineto tracking mounts with video capability. Completed radar service life extension upgrades on first two of seven FPS-16 radars. Completed integration of Global Positioning System Range Application Joint Program Office (GPS RAJPO) equipment into range systems. Continued development of GPS support capability. Completed third and initiated fourth of five land range radar upgrades to controls, consoles and pedestals. Completed Electronic Combat Range (ECR) post test analysis and data products hardware and software upgrades. Completed upgrades to the land range control center integration and processing system. Continued to improve and secure communication, cable plant, and sea range data processing capabilities. Continued Air Surveillance radar replacement for San Nicolas Island. Completed final phase of analog microwave and range Internet removal to Vandenberg Air Force Base. Completed communication and control and radio communication improvements. Continued high rate telemetry data acquisition and processing upgrades at the Sea Range. Within this Program Element, completed environmental requirements for new and existing technologies.

R-1 Line Item 133  
 UNCLASSIFIED

# EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N

PROJECT NUMBER: W2195

PROGRAM ELEMENT TITLE: Major T&E Investment

PROJECT TITLE: T&E Investment

- (\$7,491) NAVAIRWARCENACDIV. Continued ICR efforts on existing flight test and ground test systems to maintain core capabilities. Continued upgrade of dynamic avionics measurement capabilities. Completed improvement to range command, control, tracking, and data acquisition and computation systems. Completed Modeling and Simulation for Test and Evaluation. Completed environmental requirements for new and existing technologies. Initiated engineering evaluation efforts for the East Coast Communications Network.

## 2. (U) FY 1999 PLAN:

- (\$6,911) NAVUNSEAWARCEN DET AUTEC. Continue the Tracking Hydrophone Replacement project.
- (\$6,614) NAVAIRCENWPNDIV. Continue to modernize core instrumentation capability. Complete upgrade of six Kineto tracking mounts with video trackers, infrared (IR) cameras and telescopes, and microwave transmission capability. Complete Sea Range data processing capabilities. Continue high rate telemetry data acquisition and processing upgrades at the Sea Range. Complete land range radar upgrades. Initiate the transfer and refurbishment of an ARSR-3 air surveillance radar to the Sea Range.
- (\$3,646) NAVAIRWARCENACDIV. Continue ICR efforts on existing flight test and ground test systems to maintain core capabilities. Complete upgrade of dynamic avionics measurement capabilities.
- (\$3,892) This is a Congressional mandated project for the East Coast Communications Network program. Continue identification of interconnectivity and interoperability requirements. Procure required hardware and software to support program efforts. Develop a Navy wide band connectivity to support Modeling and Simulation. Provide technical support to the Navy acquisition community using the East Coast Communications Network. Continue defining test capabilities and cost benefits using the East Coast Communications Network system.
- ( \$169) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15USC 638.

## 3. (U) FY 2000 PLAN:

- (\$7,100) NAVUNSEAWARCEN DET AUTEC. Complete the Tracking Hydrophone Replacement project. Continue ICR efforts. Initiate Radar Systems Improvement Project. Initiate Off-Board Advanced Systems Stimulator Project. Initiate the Underwater Range Data Communication Project.
- (\$22,421) NAVAIRCENWPNDIV. Continue to modernize core instrumentation capability. Complete nine additional Kineto tracking mounts with video tracker, IR cameras and telescopes, and microwave transmission capability. Complete upgrade to all Weapons Division ranges data presentation and display systems. Continue high rate telemetry data acquisition and processing upgrades from one to four 20Mb/s data streams at the Sea Range. Complete the refurbishment and installation of the ARSR-3 radar at the Sea Range. Initiate the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Initiate efforts to maintain the existing Integrated Target Control System until a new target control system is developed and fielded. Initiate modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Initiate modernizing deteriorated copper cables providing data, video and communications within the Sea Range complex. Initiate a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers.

R-1 Line Item 133

UNCLASSIFIED

# EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0604759N      PROJECT NUMBER: W2195  
 PROGRAM ELEMENT TITLE: Major T&E Investment      PROJECT TITLE: T&E Investment

- (\$13,100) NAVAIRWARCENACDIV. Continue to modernize core instrumentation capability. Modernize two RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Replace aging Telemetry acquisition and processing equipment. Replace and upgrade obsolescent image generators and video display systems at the Manned Flight Simulator facility. Develop full-spectrum dynamic avionics and aircraft signature measurement system. Procure Common Avionics Instrumentation System (CAIS) hardware suites. Provide fiber-optic connectivity between multiple sites and range facilities. Correct deficiency in tactical electronic warfare simulators. Develop and install radio frequency to fiber optic interface system.

## (U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	34,164	17,281	48,482
(U) Appropriated Value:	36,236	21,281	
(U) Adjustments from Pres Budget:	-600	+3,951	-5,861
(U) FY 2000 Pres Budget Submit:	33,564	21,232	42,621

## CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 reflects decreases of \$545 thousand for the Small Business Innovative Research (SBIR) assessment and, \$55 thousand for minor programmatic adjustments. FY 1999 reflects an increase of \$4,000 thousand for the East Coast Communications network, (executed under project unit W2447) and a decrease of \$49 thousand for Congressional undistributed reductions. FY 2000 reflects decreases of \$250 thousand for the Air Transport Study, \$928 thousand for Target 21 initiatives, \$412 thousand for other Navy priorities, and \$444 thousand for pricing adjustments. In addition, the following funds were realigned from this project to the following program elements and projects: \$1,927 thousand to P.E. 0605864N, project W0654 (MRTFB); \$1,400 thousand to P.E. 0605863N, project W0568 (R&D project flying); and \$500 thousand to P.E. 0605853N, project W2347 (T&E Modeling & simulation).

(U) Schedule: Not applicable

(U) Technical: Not applicable

R-1 Line Item 133  
 UNCLASSIFIED

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0604759N      PROJECT NUMBER: W2195  
PROGRAM ELEMENT TITLE: Major T&E Investment      PROJECT TITLE: T&E Investment

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E

(U) P.E. 0605807F: Test and Evaluation (Air Force)  
0605864N: Test and Evaluation (Navy)

(U) D. ACQUISITION STRATEGY: The overall program is designed to establish a synergism with investments that supports a corporate Navy goal of ensuring required Test and Evaluation capabilities are available for acquisition program test at the least possible cost. These projects enable Navy Test and Evaluation ranges to support test program milestone decisions as well as develop and field testing capabilities needed to support advanced technology acquisition programs.

(U) E. SCHEDULE PROFILE: Not applicable.

R-1 Line Item 133  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N  
Major T&E Investment

PROJECT NUMBER: W2195  
PROJECT TITLE T&E Investment

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>			
Instrumentation Component Replacement	WX	NAWCAD, Patuxent River, MD	4,174	1,146	10/98	1,000	10/99	CONT.	CONT.	
Instrumentation Component Replacement	WX	NAWCWD, Point Mugu, CA	6,857	1,500	10/98	1,500	10/99	CONT.	CONT.	
Dynamic Avionics Measurements	WX	NAWCAD, Patuxent River, MD	10,432	2,000	10/98				12,432	
Tracking Hydrophone Replacement	WX	AUTEC, Newport, RI	8,272	6,981	10/98	2,000	10/99		17,253	
Tracking Mounts	WX	NAWCWD, Point Mugu, CA	7,499	1,410	10/98	2,655	10/99	1,303	12,867	
Range Telemetry Systems	WX	NAWCWD, Point Mugu, CA	4,869	1,032		2,293	10/99	1,147	9,341	
Air surveillance Radar	WX	NAWCWD, Point Mugu, CA	260	1,200		1,556	10/99		3,016	
Slep FPS-16	WX	NAWCWD, Point Mugu, CA				3,000	10/99	8,350	11,350	
Radar Sys Improvements	WX	AUTEC, Newport, RI				1,700	10/99	2,900	4,600	
CATS-Radars	WX	NAWCAD, Patuxent River, MD				1,000	10/99	2,700	3,700	
Test Monitoring and Processing	WX	NAWCAD, Patuxent River, MD				1,700	10/99	6,300	8,000	
Target Control System	WX	NAWCWD, Point Mugu, CA				2,000	10/99	3,000	5,000	
Off-Board Advanced Sys Stimulator	WX	AUTEC, Newport, RI				2,300	10/99	12,800	15,100	
Manned Flight Stimulator Upgrades	WX	NAWCAD, Patuxent River, MD				1,000	10/99	5,500	6,500	
MRTFB Surveillance	WX	NAWCWD, Point Mugu, CA				2,600	10/99	6,000	8,600	
Dynamic Multi-spectral Avionics Measure	WX	NAWCAD, Patuxent River, MD				1,900	10/99	7,500	9,400	
Underwater Range Data Communication	WX	AUTEC, Newport, RI				600	10/99	5,179	5,779	
CAIS Equipment	WX	NAWCAD, Patuxent River, MD				3,000	10/99	5,500	8,500	
Cable Plant Phase II	WX	NAWCWD, Point Mugu, CA				1,500	10/99	5,500	7,000	

## R-1 Line Item 133 UNCLASSIFIED



# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N  
Major & T&E Investment

PROJECT NUMBER: W2195  
PROJECT TITLE: T&E Investment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Fiber Optic Network Connectivity	WX	NAWCAD, Patuxent River, MD		800	10/99	1,000	1,800			
ATEWES Generator Upgrade	WX	NAWCAD, Patuxent River, MD		1,500	10/99	575	2,075			
ARDS Receiver Upgrade	WX	NAWCWD, Point Mugu, CA		3,400	10/99	2,900	6,300			
RF to Fiber Transmission Interface	WX	NAWCAD, Patuxent River, MD		1,200	10/99	1,200	2,400			
Remote TM Stations	WX	NAWCWD, Point Mugu, CA		992	10/98	3,805	4,797			
Investment Items Less Than \$1M	WX	Various	294,631	1,902	10/98	1,425	CONT.	CONT.		
East Coast Communications	WX	NAWCAD, Patuxent River, MD		3,892	1/99					
<b>Subtotal Product Development</b>			<b>336,994</b>	<b>21,063</b>		<b>42,621</b>	<b>83,159</b>	<b>165,810</b>		
Remarks										
<b>Subtotal Support: Not applicable</b>			<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		
Remarks										
<b>Subtotal T&amp;E: Not applicable</b>			<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		
Remarks										
<b>Subtotal Management:</b>			<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>		
SBIR Assessment				169			70			
Remarks										
<b>Total Cost</b>			<b>336,994</b>	<b>21,232</b>		<b>42,621</b>	<b>83,159</b>	<b>165,880</b>		

R-1 Line Item 133  
UNCLASSIFIED

**UNCLASSIFIED**

**This Page Intentionally Left Blank**

**R-1 Line Item 133  
UNCLASSIFIED**

**UNCLASSIFIED**  
**EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

DATE: February 1999

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
L2097 Manpower, Personnel, and Training	230	232	288	293	298	304	310	317	CONT.	CONT.
R0132 CNO Program Analysis and Evaluation	185	109	301	307	313	317	319	333	CONT.	CONT.
R0133 National Academy of Sciences/Naval Studies Board	1,720	1,121	2,034	2,071	2,136	2,167	2,294	2,394	CONT.	CONT.
R0147 Operational Strategic and Tactical Effectiveness Analysis	303	166	458	469	477	484	489	509	CONT.	CONT.
S2233 Naval Surface Warfare Studies	1,516	1,551	1,483	2,195	1,564	1,467	1,520	2,684	CONT.	CONT.
S2354 Expeditionary Warfare Studies	0	0	485	479	478	477	488	500	CONT.	CONT.
W2092 Naval Aviation Studies	2,816	1,852	3,482	2,310	2,351	2,390	2,430	2,471	CONT.	CONT.
<b>TOTAL</b>	<b>6,770</b>	<b>5,031</b>	<b>8,531</b>	<b>8,124</b>	<b>7,617</b>	<b>7,606</b>	<b>7,850</b>	<b>9,208</b>	<b>CONT.</b>	<b>CONT.</b>

Quantity of RDT&E Articles

(U) **MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This program provides analytical support to the Secretary of the Navy and the Chief of Naval Operations as a basis for major policy, planning and acquisition program execution decisions. It supports research and development strategy development and planning. It supports studies in the areas of manpower, personnel, training, and aviation. It also develops analytical tools for evaluating effectiveness of U.S. weapons against potential foreign threat ships and submarines.

(U) **JUSTIFICATION FOR BUDGET ACTIVITY:** This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: L2097**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: Manpower, Personnel and Training**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
L2097 Manpower, Personnel and Training	230	232	288	293	298	304	310	317	CONT.	CONT.
<b>TOTAL</b>										

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Chief of Naval Personnel has an ongoing need for direct analyses of Navy manpower and personnel (MP) policies and program planning. This project provides an essential management tool to: (a) assess the effectiveness of existing MP policies and programs, (b) identify needs for new policies and programs, (c) determine the required manpower and training mix relative to changing demographic, societal and legislative/regulatory trends, and to evolving strategic and geopolitical factors, (d) study the impact of MP programs on Navy accession, retention, and performance, and (e) develop, validate and/or refine a broad range of MP forecasting models. The program permits Navy to more effectively utilize Research and Development expertise to respond to emerging MPT issues.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$75) Conducted a detailed Navy-wide analysis and completed a report recommending more relevant and accurate measures of retention for enlisted personnel, including automated enlisted reporting systems that allow for efficient collection, exchange, and analysis of retention metrics.
- (U) (\$86) Analyzed and developed a Career Progression Enhancement to the Sea-Shore Rotation Model (SSRM). The interactive capability achieved by this enhancement to the SSRM will be utilized to assess down-sizing and cost savings programs such as outsourcing to support sea-shore rotation and career progression to preclude adverse impact the Navy's shore billet base.
- (U) (\$71) Conducted a study of Minority Representation in Enlisted Communities. Conducted analysis and completed a report documenting the methodology, its application, and recommendations for adjusting cut score values and other factors to improve the distribution of minorities and women across ratings and the consistency of aggregate goals and A-School fill rates.
- (-\$2) Small Business Innovative Research (SBIR) Program.

**R-1 Line Item 134  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605152N**      **PROJECT NUMBER: L2097**  
**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**      **PROJECT TITLE: Manpower, Personnel and Training**

**2. FY 1999 PLAN:**

- (U) (\$75) Extend a study of Minority Representation to include Career Progression in Officer Communities.
- (U) (\$75) Update and validate Navy Pay Predictor, Officer (NAPPO) Model for effective longevity management.
- (U) (\$82) Develop Separations Pay Model for accurate requirements management and costing.

**3. FY 2000 PLAN:**

- (U) (\$88) Develop a requirement-based Selective Reenlistment Bonus (SRB) Model.
- (U) (\$100) Study the cost, productivity and readiness impacts of family violence.
- (U) (\$100) Support studies directed at personnel policies to support the reduced manning initiatives.

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	232	287	292
(U) Appropriated Value:	232	287	
(U) Adjustments from 1999 Pres. Budget:	-2	-55	-4
(U) FY 2000 President's Budget Submit:	230	232	288

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0605152N

**PROJECT NUMBER:** L2097

**PROGRAM ELEMENT TITLE:** Studies and Analysis Support, Navy

**PROJECT TITLE:** Manpower, Personnel and Training

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 funding adjustment (-\$2) thousand: Applied to Small Business Innovative Research (SBIR) program. FY 1999 funding adjustment (-\$55) thousand: Congressional cut: Maintain at FY 1998 (-\$54) thousand; economic adjustment (-\$1) thousand. FY 2000 funding adjustment (-\$4) thousand: Non pay inflation adjustment.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

Related RDT&E

(U) P.E. 0603707N (Manpower, Personnel, and Training Advanced Technology Development)

(U) P.E. 0604703N (Manpower, Personnel, and Training, Simulation and Human Factors)

(U) P.E. 0602234N (Materials, Electronics and Computer Technology)

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 134**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROJECT NUMBER: R0132

PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy  
PROJECT TITLE: CNO Program Analysis and Evaluation

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
R0132 CNO Program Analysis and Evaluation										
TOTAL	185	109	301	307	313	317	319	333	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides analytical support to the Chief of Naval Operations and the Secretary of the Navy in evaluation of overall balance within total Navy programs. This includes such tasks as: (a) evaluation of force capabilities and requirements; (b) analysis of effectiveness of systems under development; (c) Secretary of Defense directed independent cost and effectiveness analyses of major Navy programs; and (d) items of Congressional interest as they relate to Navy programs. Deliverables consist of formal, structured documents containing or leading to conclusions and/or recommendations as well as the development and maintenance of databases and models. The use of databases and models is driven by the need to objectively and continually assess the impact of reduced funding and/or force drawdown upon Navy programs. They provide Navy planners and decision makers with objective, empirical data with which to make determinations regarding program planning and evaluation of issues. The models funded by this account are the primary tools used to formulate program balance in the assessment process (particularly the Readiness, Support and Infrastructure Assessment and the Investment Balance Review). The analyses based on these models form the heart of the Investment Balance Review, allowing the Navy to formulate and cost-out alternative force structure, manpower, infrastructure and readiness programs.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$185) Developed techniques for analysis of Navy Readiness requirements versus capabilities and to maintain the Aviation Readiness model and the Ships Resource-to-Readiness model.

R-1 Line Item 134  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0605152N

**PROJECT NUMBER:** R0132

**PROGRAM ELEMENT TITLE:** Studies and Analysis Support, Navy  
**PROJECT TITLE:** CNO Program Analysis and Evaluation

**2. FY 1999 PLAN:**

- (U) (\$101) Maintain the Aviation Readiness model and the Ships Resource-to-Readiness model.
- (U) (\$6) Conduct studies and analyses to support the Navy's Assessment process.
- (U) (\$2) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. FY 2000 PLAN:**

- (U) (\$246) Develop techniques for analysis of Navy Readiness requirements versus capabilities and to maintain the Aviation Readiness model and the Ships Resource-to-Readiness model.
- (U) (\$55) Conduct studies and analyses to support the Navy's Assessment process.

**R-1 Line Item 134**  
**UNCLASSIFIED**



# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROJECT NUMBER: R0132

PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy  
PROJECT TITLE: CNO Program Analysis and Evaluation

### (U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	198	304	308
(U) Appropriated Value:	0	-106	
(U) Adjustments from 1999 Pres. Budget:	-13	-195	-7
(U) FY 2000 President's Budget Submit:	185	109	301

### CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 adjustment is due to SBIR (-12) thousand and FY 1998 update (-1) thousand. FY 1999 adjustment is due to Congressional reduction (-105) thousand and Contractor Advisory & Assistance Service (-90) thousand. FY 2000 adjustment is due to assessment for Acquisition Center of Excellence (-3) thousand and Non Pay inflation (-4) thousand.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

### Related RDT&E

(U) P.E. 0605154N (Center for Naval Analysis)

(U) P.E. 0605873N (Marine Corps Program Wide Support)

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: R0133**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: National Academy of Science/  
Naval Studies Board**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
R0133 National Academy of Science/Naval Studies Board										
<b>TOTAL</b>	1,720	1,121	2,034	2,071	2,136	2,167	2,294	2,394	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the core program for the Naval Studies Board. As agreed upon between the Chief of Naval Operations (CNO) and the President of the National Academy of Sciences and with appropriate attention to the influence of the domestic economy, national objectives, social imperatives and anticipated military requirement, the Naval Studies Board will conduct and report upon surveys, investigations, and analyses in the field of scientific research and development applicable to the operation and function of the Navy. Reports consist of a briefing to the Assistant Secretary of the Navy (Research Development and Acquisition) (ASN (RD&A)) and the CNO and staff, and written technical reports.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$649) Continued research efforts and investigations in areas of interest to the Navy. Continued to support annual Navy authorized activities of importance, such as the National Space Forum and the Weinblum Memorial Lecture Series.
- (U) (\$1,071) Produced nine studies about the future of naval technology. Initiated two high payoff studies selected from proposals received from CNO and ASN (RD&A).

**R-1 Line Item 134  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: R0133**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**  
**PROJECT TITLE: National Academy of Science/  
Naval Studies Board**

**2. FY 1999 PLAN:**

- (U) (\$755) Continue research efforts and investigations in areas of interest to the Navy. Continue to support annual Navy authorized activities of importance, such as the National Space Forum and the Weinblum Memorial Lecture Series.
- (U) (\$338) Produce investigations of significant importance to the Navy concerning technology of the future, selected from proposals received from CNO and ASN (RD&A).
- (U) (\$28) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. FY 2000 PLAN:**

- (U) (\$685) Continue research efforts and investigations in areas of interest to the Navy. Continue to support annual Navy authorized activities of importance, such as the National Space Forum and the Weinblum Memorial Lecture Series.
- (U) (\$1,349) Produce investigations of significant importance to the Navy concerning technology of the future, selected from proposals received from CNO and ASN (RD&A).

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: R0133**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: National Academy of Science/  
Naval Studies Board**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget::	1,822	2,365	2,351
(U) Appropriated Value:	0	1,823	
(U) Adjustments from 1999 Pres. Budget:	-102	-1,244	-317
(U) FY 2000 President's Budget Submit:	1,720	1,121	2,034

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 adjustment are due to SBIR assessment (-\$51) thousand and (-\$51) thousand for Actual Update. FY 1999 adjustment is due to Revised Economic Assumptions (-\$4) thousand, CAAS (-\$698) thousand, Congressional Reduction (-\$542) thousand. FY 2000 adjustment is due to Non Pay Inflation (-\$29) thousand and Program Realignment (-\$288) thousand.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

Related RDT&E: Not applicable.

(U) P.E.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 134  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605152N**      **PROJECT NUMBER: R0147**  
**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**      **PROJECT TITLE: Operational Strategic and Tactical Effectiveness Analysis**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
<b>R0147 Operational Strategic and Tactical Effectiveness Analysis</b>										
<b>TOTAL</b>	<b>303</b>	<b>166</b>	<b>458</b>	<b>469</b>	<b>477</b>	<b>484</b>	<b>489</b>	<b>509</b>	<b>CONT.</b>	<b>CONT.</b>

Quantity of RDT&E Articles

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project provides the Chief of Naval Operations and the Secretary of the Navy direct analyses of Navy policy, strategy acquisition, and program planning in meeting the following objectives: (a) producing study results impacting upon important programs/issues; (b) identifying and evaluating policy and strategy alternatives and doctrine; and (c) evaluating the capabilities of programmed forces to accomplish missions assigned to the Navy. Deliverables consist of formal, structured documents containing or leading to conclusions and/or recommendations as well as the development and maintenance of databases and models. This project directly supports and is critical for conducting the Navy's joint mission assessments.

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- (U) (\$263) Conducted reviews of the Capability Resource Allocation Display (CAPRAD) database and performed econometric/statistical analyses on the impact of changes resulting from downsizing and programmatic changes. Also updated and revalidated the Integrated Program Assessment System (IPAS) and other models in order to run these programs using revised allocation displays.
- (U) (\$40) Conducted studies and provided enhancements to Integrated Theater Engagement Model (ITEM), the primary tool for campaign analysis for Assessments and performed analysis of force structure requirements.

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0605152N

**PROJECT NUMBER:** R0147

**PROGRAM ELEMENT TITLE:** Studies and Analysis Support, Navy      **PROJECT TITLE:** Operational Strategic and Tactical Effectiveness Analysis

**2. FY 1999 PLAN:**

- (U) (\$157) Conduct reviews of the CAPRAD database and perform econometric/statistical analyses on the impact of changes resulting from downsizing and programmatic changes. Also update and revalidate the IPAS and other models in order to run these programs using revised allocation displays.
- (U) (\$5) Conduct studies and provide enhancements to ITEM, the primary tool for campaign analysis for Assessments and perform analysis of force structure requirements.
- (U) (\$4) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. FY 2000 PLAN:**

- (U) (\$401) Conduct reviews of the CAPRAD database and perform econometric/statistical analyses on the impact of changes resulting from downsizing and programmatic changes. Also update and revalidate the IPAS and other models in order to run these programs using revised allocation displays.
- (U) (\$56) Conduct studies and provide enhancements to ITEM, the primary tool for campaign analysis for Assessments and perform analysis of force structure requirements.
- (U) (\$1) Assessments and perform analysis of force structure requirements.

**R-1 Line Item 134**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605152N      PROJECT NUMBER: R0147  
 PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy      PROJECT TITLE: Operational Strategic and Tactical Effectiveness Analysis

(U) B. PROGRAM CHANGE SUMMARY	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	303	464	470
(U) Appropriated Value:	0	161	
(U) Adjustments from 1999 Pres. Budget:	0	-298	-12
(U) FY 2000 President's Budget Submit:	303	166	458

### CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 adjustments due to Revised Economic Assumption (-1) thousand, Contractor Advisory & Assistance Services (-137) and Congressional Reduction (-160) thousand. FY 2000 adjustments are due to assessment for Acquisition of Center of Excellence (-5) thousand and Non Pay Inflation (-7) thousand.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

### Related RDT&E

(U) P.E. 0605154N (Center for Naval Analyses)  
 (U) P.E. 0605873N (Marine Corps Program Wide Support)

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134  
 UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: S2233**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: Naval Surface Warfare Studies**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
S2233 Naval Surface Warfare Studies	1,516	1,551	1,483	2,195	1,564	1,467	1,520	2,684	CONT.	CONT.
<b>TOTAL</b>										

Quantity of RDT&E Articles

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project provides for analysis of the warfighting capability of Naval forces by examining specific selected numbers and mixes of surface combatants and other forces that are subjected to representative operational situations in a joint littoral environment. The U.S. strategic emphasis has shifted from global containment and warfighting to a global engagement and deference strategy with regional focus. As part of an overall effort at addressing future Naval force levels and capabilities, the Navy must assess the warfighting effectiveness of new operating concepts using different mixes of surface combatants operating in a littoral warfare environment and develop an investment strategy that supports the capabilities required. Required Operational Capabilities/Projected Operational Environment (ROC/POE) must be updated every two years or created for new ship classes. These ROC/POE's are vitally important in that mission requirements for ships drive equipment configurations, manning levels and associated shipboard accommodations, tailor ship and staff missions, capabilities, manning to new strategies, tactics, operational environments, and policies.

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$1,516) Continued analyses to identify force capabilities considering various force mixes. These studies addressed the warfighting and national security policy and strategy requirements for effective, flexible and cost-efficient Naval Surface Warfare Forces, including the numbers and mixes of surface combatants and other forces that are subjected to representative operational situations in a joint littoral environment. Measures of Effectiveness were used in characterizing Naval Surface Warfare capabilities for battle space dominance and for power projection. The results were applied to campaign scenarios and operational situations to scope, focus and interpret the analyses. The results of these analyses were applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces. Obligations were initiated in October 1997 and completed in September 1998.

**R-1 Line Item 134  
UNCLASSIFIED**



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0605152N

**PROJECT NUMBER:** S2233

**PROGRAM ELEMENT TITLE:** Studies and Analysis Support, Navy

**PROJECT TITLE:** Naval Surface Warfare Studies

**2. FY 1999 PLAN:**

- (U) (\$1,545) Continue analyses to identify force capabilities considering various force mixes. These studies will address the warfighting and national security policy and strategy requirements for effective, flexible and cost-efficient Naval Surface Warfare Forces, including new operational concepts, the numbers and mixes of surface combatants and other forces that are subjected to representative operational situations in a joint littoral environment. Measures of Effectiveness will be used in characterizing Naval Surface Warfare capabilities for battle space dominance and for power projection. The results will be applied to campaign scenarios and operational situations to scope, focus and interpret the analyses. The results of these analyses will be applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces. Revise ROC/POE instructions. Obligations initiated in October 1998 and will complete in September 1999.
- (U) (\$6) Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. FY 2000 PLAN:**

- (U) (\$1,483) Continue analyses to identify force capabilities considering various force mixes. These studies will address the warfighting and strategy requirements for effective, flexible and cost-effective Naval Surface Warfare Forces focused on the challenge of continuous operations in the littoral regions. Measures of Effectiveness will be used in characterizing Naval Surface Warfare capabilities for theater air dominance and precision land attack undergirded by maritime dominance. The results will be applied to campaign scenarios and operational situations to scope, focus and interpret the analyses. The results of these analyses will be applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces and directly support the DoN Assessment process. Revise ROC/POE instructions. Obligations will initiate October 1999 and complete September 2000.

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: S2233**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: Naval Surface Warfare Studies**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	1,559	2,586	2,776
(U) Appropriated Value:	1,951	2,586	
(U) Adjustment to FY1998 Appropriated Value/ (U) Adjustments from 1999 Pres. Budget:			
(a) Minor Pricing Adjustments	-435	-1,035	-1293
(U) FY 2000 President's Budget Submit:	1,516	1,551	1,483

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 decrease reflects FY 1998 SBIR reduction of (-\$39) thousand, general pricing adjustments of (-\$396) thousand. FY 1999 decrease reflects Congressional cut (-\$1026) thousand and general pricing adjustments (-\$9) thousand. FY 2000 decrease reflects program rebalancing (-\$1000) thousand, and general pricing adjustments (-\$293) thousand.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

Related RDT&E: Not applicable.

(U) P.E.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 134  
UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROJECT NUMBER:  
PROJECT TITLE:

S2233  
Naval Surface  
Warfare Studies

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Date</u>	<u>Cost</u>	<u>Date</u>			
Subtotal Product Development			0	0		0		CONT.	CONT.	

Remarks

Research Analysis Support

WR	Various	1411	635	983	1395	CONT.
RCP	NSWC/Dahlg	1723	416	500	638	CONT.
Comp	Various	2375	500	0	162	CONT.

Subtotal Support

5509	1551	1483	2195	CONT.
------	------	------	------	-------

Remarks

Subtotal Test & Evaluation

0	0	0	0	0
---	---	---	---	---

Remarks

Subtotal Management

0	0	0	0	0
---	---	---	---	---

Remarks

Total Cost

5509	1551	1483	2195	CONT
------	------	------	------	------

R-1 Line Item 134  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: S2354**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: Expeditionary Warfare Studies**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
S2354 Expeditionary Warfare Studies	0	0	485	479	478	477	488	500	CONT.	CONT.
<b>TOTAL</b>										

Quantity of RDT&E Articles

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project provides for analysis of the warfighting capability of Expeditionary forces, with emphasis on the joint littoral environment, by examining specific selected numbers and mixes of amphibious combatants, mine warfare forces and other forces that are subjected to represent operational situations in a joint littoral environment. The U.S. strategic emphasis has shifted from global containment and warfighting to a global engagement and deference strategy with regional focus. As part of an overall effort at addressing future Naval force levels and capabilities, the Navy must assess the warfighting effectiveness of new operational concepts using different mixes of expeditionary combatants operating in a littoral warfare environment and develop an investment strategy that supports the capabilities required.

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

1. FY 1998 ACCOMPLISHMENTS: Not applicable.

2. FY 1999 PLAN:

- (U) None. Dedicated Expeditionary Warfare Studies efforts begin in FY2000.

3. FY 2000 PLAN:

- (U) (\$485) Initiate efforts for dedicated analyses of Expeditionary Warfare Studies. Continue analysis to identify force capabilities considering various force mixes. These studies will address the warfighting and national security policy and strategy requirements for effective, flexible and cost-efficient Naval Expeditionary Warfare Forces, including the numbers and mixes of expeditionary combatants, to include mine warfare forces and other forces that are subjected to represent operational situations in a joint littoral environment. Measures of Effectiveness will be used in characterizing Naval Expeditionary Warfare applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces. Obligations will initiate in October 1999 and complete in September 2000.

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: S2354**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT TITLE: Expeditionary Warfare Studies**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	0	491	489
(U) Appropriated Value:	0	491	
(U) Adjustments from 1999 Pres. Budget:			
(a) Minor Pricing Adjustments	0	-491	-4
(U) FY 2000 President's Budget Submit:	0	0	485

**CHANGE SUMMARY EXPLANATION:**

- (U) Funding: FY 1999 decrease reflects Congressional cut (-\$491) thousand. FY 2000 decrease reflects general pricing adjustments (-\$4) thousand.
- (U) Schedule: Not applicable.
- (U) Technical: Not applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.**

Related RDT&E: Not applicable.

(U) P.E.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 134  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605152N**      **PROJECT NUMBER: W2092**  
**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**      **PROJECT TITLE: Naval Aviation Studies**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W2092 Naval Aviation Studies	2,816	1,852	3,482	2,310	2,351	2,390	2,430	2,471	CONT.	CONT.
<b>TOTAL</b>										

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports studies over a wide range of naval aviation issues that support the ongoing Joint Strike Assessment (JSA) guidelines. Results provide a basis for recommendations to the Chief of Naval Operations concerning major policy, planning, and acquisition program decisions. This effort is a management initiative, which will allow allocation of study resources in a timely manner according to priorities. This ongoing program will continue to leverage more detailed program specific analysis in order to gain insight in acquisition of various weapon systems and their impact on force structure, manning levels, operational readiness and Carrier Air Wing effectiveness. This program will also support various Analysis of Alternatives (AOA) Studies.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$139) Completed analyses of TACAIR and weapons effectiveness, including tradeoffs of development and acquisition alternatives utilizing the WEPTAC M&S facility.
- (U) (\$500) Completed the phase two effort on Naval Aviation Training Decision Support System (NATDSS). This effort provided a prototype model, which facilitated analysis of the factors, which influence the flight hour program.
- (U) (\$188) Continued studies to support JSA issues for the current and follow-on cycle.

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**

**PROJECT NUMBER: W2092**

**PROJECT TITLE: Naval Aviation Studies**

- (U) (\$500) Initiated a two year effort to determine the mission requirements for a Multi-mission Maritime Aircraft (MMA) as a potentially common follow-on to the E-6A/B, EP-3, C-130 and C-9 aircraft. This study will lead to a Milestone 0 decision.
- (U) (\$72) Initiated Carrier Air Wing (CVW) capabilities analysis effort. Developed the scenarios and updated database to facilitate the evaluation of the limiting factors and potential capacity in projecting combat capability from the CV.
- (U) (\$160) Initiated a low level, multi-year effort to develop a consistent methodology to quantify current and estimate future vertical lift mission effectiveness. Evaluated H-60 series aircraft to conduct the Airborne Mine Countermeasures mission.
- (U) (\$330) Completed CSA feasibility study.
- (U) (\$175) Conducted analyses of Department of Navy Short Take-Off Vertical Aircraft Landing (DON STOVAL, STOVAL) survivability, technology and hardware issues for UAV marinization on carriers and L-class ships, cost benefit for land based SAR outsourcing, and aviator retention.
- (U) (\$750) Conducted analyses of N88 UAV CONOPS development using CIRPAS Pelican aircraft as a surrogate UAV, to develop UAV models to guide the generation of CONOPS and to support planning for future Fleet Battle Experiments.
- (U) (\$2) Provided support for general aviation related AOA's and studies with NAVAIR and OPNAV.

**2. FY 1999 PLAN:**

- (U) (\$375) Continue analyses of TACAIR modernization alternatives. Perform sensitivity analyses utilizing M&S tools as required.
- (U) (\$50) Continue studies to support JSA issues for the current and follow-on cycle. Initiate evaluation of warfare planning factors.
- (U) (\$850) Complete studies to determine the mission requirements for a MMA as a potentially common follow-on to the E-6A/B, EP-3, P-3, C130 and C-9 aircraft. This study will support a Milestone 0 decision.

**R-1 Line Item 134**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605152N**

**PROJECT NUMBER: W2092**

**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**   **PROJECT TITLE: Naval Aviation Studies**

- (U) (\$300) Continue Carrier Air Wing (CVW) capabilities analysis effort. Begin the evaluation of the limiting factors and potential capacity in projecting combat capability from the CVW.
- (U) (\$277) Provide support for general aviation related AOA's and studies within NAVAIR and OPNAV.

**3. FY 2000 PLAN:**

- (U) (\$500) Continue Carrier Air Wing (CVW) capabilities analysis effort. Evaluate the limiting factors and potential capacity in projecting combat capability from the Aircraft Carrier Battle Group (CVBG).
- (U) (\$200) Prepare a naval aviation developmental plan that will provide for the future operational capabilities required to support network centric warfare including future vertical lift requirements.
- (U) (\$499) Conduct studies to explore the potential utilization of high speed weapons with initial operating capability in FY2010 to FY2015. Study is to establish operational requirements and conduct preliminary analysis for this family of weapons.
- (U) (\$500) Continue studies to support JSA issues for the current and follow-on cycle.
- (U) (\$200) Begin studies to evaluate concepts of operations for strike missions.
- (U) (\$500) Begin studies to explore alternatives for Advanced Weapons Initiatives.
- (U) (\$1000) Begin studies to develop requirements for EA-6B Follow-on.
- (U) (\$83) Provide support for general aviation related AOA's and studies within NAVAIR and OPNAV.

**R-1 Line Item 134**  
**UNCLASSIFIED**



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605152N**      **PROJECT NUMBER: W2092**  
**PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy**      **PROJECT TITLE: Naval Aviation Studies**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	1,916	3,518	3,041
(U) Appropriated Value:	1,916	3,518	
(U) Adjustments from 1999 Pres. Budget:	+900	-1,666	+441
(U) FY 2000 President's Budget Submit:	2,816	1,852	3,482

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY-98 reflects a net increase of +\$900 thousand which includes a -\$28 thousand reduction for Small Business Innovative Research (SBIR) assessment, an increase of +\$728 thousand for a below threshold reprogramming for UAV CONOPS development, and an increase of +\$200 thousand for an in-house realignment for CSA Program initiatives. FY-99 reflects a net decrease of -\$1666 which includes a -\$1600 thousand reduction as a Congressional adjustment and -\$66 thousand reduction for economic adjustments. The net increase of +\$441 thousand in FY2000 represents an increase of +499 thousand for a hypersonic missile study, -\$5 thousand reduction for baseline issues, and -\$53 thousand reduction for economic adjustments.

(U) Schedule: N/A

(U) Technical: N/A

**(U) C. OTHER PROGRAM FUNDING SUMMARY:** Not applicable.

**(U) D. ACQUISITION STRATEGY:** Not applicable

**(U) E. SCHEDULE PROFILE:** Not applicable.

**R-1 Line Item 134**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROJECT NUMBER:  
PROJECT TITLE:

W2092  
Naval Aviation Studies

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Target Value of Contract
			FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	

Cost Categories:

### Subtotal Product Development

Remarks

CONT. CONT.

Miscellaneous  
Concept Studies

Misc  
TBD

2613 1642 1972  
1500

### Subtotal Support

Remarks

CONT. CONT.

### Subtotal Test & Evaluation

Remarks

CONT. CONT.

Miscellaneous

Misc

203 210 10

### Subtotal Management

Remarks

203 210 10

### Total Cost

CONT. CONT.

2816 1852 3482

R-1 Line Item 134  
UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROGRAM ELEMENT TITLE: Center for Naval Analyses

(U) COST: (Dollars in Thousands)

## PROJECT

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
C0031 Marine Corps Operations Analysis Group										
	3,576	4,188	4,368	4,392	4,481	4,616	4,862	4,961	CONT.	CONT.
R0148 Center for Naval Analyses, Navy										
	35,770	37,694	39,326	39,915	40,939	41,471	42,084	43,765	CONT.	CONT.
TOTAL	39,346	41,882	43,694	44,307	45,420	46,087	46,946	48,726	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Center for Naval Analyses (CNA) is the Department of the Navy's only Federally Funded Research and Development Center. CNA provides independent, objective, and expert analyses based on its unique access to sensitive data and hands-on exposure to fleet operations gained through its world-wide field program. CNA's Research Program is centrally funded by this program element and is primarily concentrated along 1 Marine Corps category and 10 Navy categories of study called product areas. These product areas are structured to enhance CNA's focus of research and analysis upon the major present and future needs and issues of the Navy and the Marine Corps. Because of rapid advances in technology, changes in the fleet, the increasing complexity of weapon systems, and reductions in manpower, force structure, and budgets, the Navy and Marine Corps have a greater need for analyses that are both sophisticated and timely. CNA is highly qualified to meet that need.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.(U) COST: (Dollars in Thousands)

(U) PROGRAM CHANGE FOR TOTAL PE:

	FY 1998	FY 1999	FY 2000
(U) FY 1999 President's Budget:	35,347	44,201	45,137
(U) Appropriated Value:	-	44,201	-

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 1 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROGRAM ELEMENT TITLE: Center for Naval Analyses

(U) Adjustment from FY 1999 PRESBUDG:	+3,999	-2,319	-1,443
(U) FY 2000 President's Budget Submission:	39,346	41,882	43,694

## (U) CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 1998 increase is due to Actual Execution Update (+3,999). The FY 1999 decrease is due to Economic Assumption Reduction (-102) and FFRDC adjustment (-2,217). The FY 2000 decrease is due to Non Pay Inflation adjustment (-631), and program adjustment (-812).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 2 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
C0031 Marine Corps Operations and Analysis Group (MCOAG)	3,576	4,188	4,368	4,392	4,481	4,616	4,862	4,961	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the Marine Corps portion of the Department of the Navy's (DoNs) Center for Naval Analyses (CNA) Research Program. It is managed as an element of the Marine Corps Studies System. This program provides the Marine Corps with independent and objective research and analysis of specific issues/topics appropriate for a Federally Funded Research and Development Center (FFRDC). As a result of the finding and recommendations of the Fiscal Year 1997 Defense Science Board, the Marine Corps refocused the type of support CNA provides. This refocusing effort reduced the number of field representatives for the Operational Forces commanders and established five specific areas of expertise for CNA to establish and maintain: (1) Logistics, (2) Manpower, (3) Programs and Resources, (4) Naval Integration, and (5) Operations. The scientific analyst support was also reduced from nine part-time (each providing 20% per year) to five full-time scientific analysts, one for each of the five focus areas. The revised program continues to provide analytical support for field exercise, ad hoc, and quick response requirements.

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 3 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: C0031

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Marine Corps Operations and Analysis Group

## (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$317) Established and maintained the LOGISTICS Area of Expertise including the funding of one scientific analyst. Executed high-priority study and analysis requirements including the completion of the Class IX War Materiel Requirements study and the Principle End Item Distribution study.
- (U) (\$332) Established and maintained the MANPOWER Area of Expertise including the funding of one scientific analyst. Completed the Climate Survey Battery study and started the Manpower Inventory Projection Model(s) study. Other smaller analysis efforts that were initiated and completed included the Women's Campaign Plan, Unit Cohesion, and Home-Schooling Educational Credentials studies.
- (U) (\$333) Established and maintained the PROGRAMS and RESOURCES Area of Expertise including the funding of one scientific analyst. Executed high-priority study and analysis projects including the initiation of the Relating Readiness to Resources study, and initiated efforts to define the objectives and scope for the Better Business Practices study.
- (U) (\$410) Established and maintained the OPERATIONS Area of Expertise, including providing analysts for field exercise support and the funding of one scientific analyst. Completed the WESPAC Basing study and initiated project development efforts for defining the objectives and scope for the Procedures and Training Enhancements for Combined Arms Engagements and the Joint Task Force Headquarters studies.
- (U) (\$381) Established and maintained the Naval Integration Area of Expertise including the funding of one scientific analyst. Executed a high-priority Command/Element/Component Headquarters study project. Initiated Complex Adaptive Systems research efforts in conjunction with the BIOS consortium.
- (U) (\$901) Funded the staffing of five field representative billets with Commander Marine Forces Pacific (COMMARFORPAC), Commanding General I Marine Expeditionary Force (CG I MEF), Commanding General II Marine Expeditionary Force (CG II MEF), Commanding General III Marine Expeditionary Force (CG III MEF), and Commanding General Marine Corps Air-Ground Combat Center (CG MCAGCC).
- (U) (\$902) Executed several "Quick Response" studies focused on the implementation of the Operational Maneuver From the Sea (OMFTS) concept including the Vision for the Future Marine Corps Employment of Non-Lethal Weapons study; AD HOC support for the USMC Aviation Board, Harrier Aircraft Review Panel, and Aging of the Aviation

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 4 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: C0031

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Marine Corps Operations and Analysis Group

Enlisted Force and the Joint Force Deployment Planning & Execution studies; and administrative support functions including: General Concept Development CNA Self-Initiated Analysis Efforts, and Award Fee funding.

## 2. (U) FY 1999 PLAN:

- (U) (\$509) Continue maintenance of the LOGISTICS Area of Expertise including the funding of one scientific analyst. Execute high-priority logistics related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$462) Continue maintenance of the MANPOWER Area of Expertise including the funding of one scientific analyst. Execute high-priority force structure and personnel related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$480) Continue maintenance of the PROGRAMS and RESOURCES Area of Expertise including the funding of one scientific analyst. Execute high-priority program, resource, and readiness related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$511) Continue maintenance of the OPERATIONS Area of Expertise including providing analysts for field exercises and the funding of one scientific analyst. Execute high-priority Joint and MAGTF operations related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$468) Continue maintenance of the Naval Integration Area of Expertise including the funding of one scientific analyst. Execute high-priority Naval (From the Sea and OMFTS) and non-linearity aspects of combat related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$868) Continue staffing five field representative billets at COMMARFORPAC, CG I MEF, CG II MEF, CG III MEF, and CG MCAGCC.
- (U) (\$890) Execute 4 to 6 "Quick Response" study projects (start to finish within 90 days); AD HOC support for the immediate analytical support requirements; and administrative support functions including: General Concept Development, CNA Self-Initiated Analysis Efforts, and Award Fee funding.

## 3. (U) FY 2000 PLAN:

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 5 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: C0031

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Marine Corps Operations and Analysis Group

- (U) (\$495) Continue maintenance of the LOGISTICS Area of Expertise including the funding of one scientific analyst. Execute high-priority logistics related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$400) Continue maintenance of the MANPOWER Area of Expertise including the funding of one scientific analyst. Execute high-priority force structure and personnel related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$601) Continue maintenance of the PROGRAMS and RESOURCES Area of Expertise including the funding of one scientific analyst. Execute high-priority QDR, program, resource, and readiness related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$645) Continue maintenance of the OPERATIONS Area of Expertise including providing analysts for field exercises and the funding of one scientific analyst. Execute high-priority Joint and MAGTF operations and OMFTS implementation related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$545) Continue maintenance of the Naval Integration Area of Expertise including the funding of one scientific analyst. Execute high-priority QDR, Naval (From the Sea and OMFTS) and non-linearity aspects of combat related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$684) Fund the staffing of four field representative billets at COMMARFORPAC, CG I MEF, CG II MEF, and CG III MEF. Eliminated the field representative billet at MCAGCC to provide additional funds for study projects.
- (U) (\$998) Execute 5 to 8 "Quick Response" study projects (start to finish within 90 days); AD HOC support for the immediate analytical support requirements; and administrative support functions including: General Concept Development, CNA Self-Initiated Analysis Efforts, and Award Fee funding.

B. (U) PROGRAM CHANGE SUMMARY: See program change total summary for P.E.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) PE 0605873M (Marine Corps Program Wide Support)

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 6 of 9)

# UNCLASSIFIED



# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT NUMBER: C0031

PROJECT TITLE: Marine Corps Operations and  
Analysis Group

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 7 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N  
PROGRAM ELEMENT TITLE: Center for Naval Analyses

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0148 Center for Naval Analyses, Navy	35,770	37,694	39,326	39,915	40,939	41,471	42,084	43,765	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the Navy's portion of the Center for Naval Analyses (CNA) Research Program, which is primarily concentrated along 10 Navy categories of study called product areas. These product areas include the following: 1) Manpower, Medical and Training; 2) Policy and Operations; 3) Infrastructure and Readiness; 4) Space and Electronic Warfare/Command, Control, Communications, and Computers/Intelligence and Information and Modeling and Simulation; 5) Systems and Force Structure; 6) Research, Development and Acquisition; 7) Systems and Tactics; 8) Field Program; 9) Scientific Analyst Program; and 10) Quick Response Projects. CNA's analyses have resulted in substantial improvements in force structure, fleet effectiveness, and significant cost avoidance.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$35,770) Addressed issues of major importance to Navy leadership in the above research areas. CNA's Research Program was continually updated to support the Navy efficiently and effectively. Support for the CNA field program, which assigns analysts to over 40 locations around the world and at sea, continued to comprise

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 8 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: R0148

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Center for Naval Analyses,  
Navy

approximately 18% of the funding. The program also emphasized the Policy and Operations and System and Force Structure product areas.

## 2. (U) FY 1999 PLAN:

- (U) (\$37,694) Address issues of major importance to Navy leadership in the above research areas. CNA's Research Program will be continually updated to support the Navy efficiently and effectively. Support for the CNA field program, which assigns analysts to over 40 locations around the world and at sea, will continue to comprise approximately 18% of the funding. Additionally, emphasis will be in the Policy and Operations and System and Force Structure product areas.

## 3. (U) FY 2000 PLAN:

- (U) (\$39,326) Address issues of major importance to Navy leadership in the above research areas. CNA's Research Program will be continually updated to support the Navy efficiently and effectively. Support for the CNA field program, which assigns analysts to over 40 locations around the world and at sea, will continue to comprise approximately 18% of the funding. Additionally, emphasis will be in the Policy and Operations and System and Force Structure product areas.

B. (U) PROGRAM CHANGE SUMMARY: See program change total summary for P.E.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

## (U) RELATED RDT&E:

(U) PE 0605152N (Studies and Analysis Support)

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 135

Budget Item Justification  
(Exhibit R-2, page 9 of 9)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation

(U) COST: (Dollars in thousands)

## PROJECT

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0151 Intertype Tactical Development and Evaluation	2,624	2,739	3,103	2,883	2,954	3,033	3,105	3,178	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element supports all naval warfare task areas and provides technical and analytical support to the fleet operating forces to develop and evaluate tactics for newly evolving force structures, new and existing weapon system employment, and changing threat scenarios to improve and measure force readiness.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:
  - (U) (\$75) Developed HARPOON Tactics.
  - (U) (\$135) Developed AIR Undersea Warfare Tactics with Low Frequency Active/Integrated Underwater Surveillance System.

R-1 Line Item 136

Budget Item Justification  
(Exhibit R-2, page 1 of 5)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROGRAM ELEMENT TITLE: Fleet Tactical Development and  
and Evaluation

PROJECT NUMBER: R0151

PROJECT TITLE: Intertype Tactical  
Development and Evaluation

- (U) (\$190) Developed Submarine Localization Tactics.
- (U) (\$18) Completed development of EA-6B HARM Tactics.
- (U) (\$11) Completed development of Lantern Tactics.
- (U) (\$86) Developed stand-off land attack missile (SLAM) Tactics.
- (U) (\$408) Developed Battle Group (BG) Stationing Procedures.
- (U) (\$207) Developed Mine Counter Measures (MCM) Vehicle.
- (U) (\$95) Developed ES-31 Targeting Tactics.
- (U) (\$190) Developed MK-48 Advanced Capability Tactics.
- (U) (\$95) Developed Anti-Terrorism Tactics.
- (U) (\$190) Continued development of Submarine/Maritime Patrol Aircraft/Surface Tactics.
- (U) (\$135) Developed BG Undersea Warfare Procedures.
- (U) (\$98) Developed MK-103 Airborne Mine Counter Measures Tactics.
- (U) (\$99) Developed P-3C Joint Mission Areas Tactics.
- (U) (\$300) Developed Torpedo Evasion Tactics.
- (U) (\$105) Developed Explosives Ordnance Disposal Tactics.
- (U) (\$87) Developed HH-60 Forward Looking Infrared (FLIR) HELLFIRE Tactics.
- (U) (\$50) Developed S-3B MAVERICK Tactics.
- (U) (\$17) Naval Postgraduate School (NPGS) and Tactical Development and Evaluation Chair Support.
- (U) (\$28) Sea Combat Commander Procedures.
- (U) (\$5) Tactical Development and Evaluation Travel.

2. (U) FY 1999 PLAN:

- (U) (\$360) Develop torpedo selection/employment.
- (U) (\$70) Develop HARPOON (air platform) tactics against small combatants in the littoral.
- (U) (\$110) Develop Aegis employment tactics in Theater Missile Defense (TMD).

R-1 Line Item 136

Budget Item Justification  
(Exhibit R-2, page 2 of 5)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROGRAM ELEMENT TITLE: Fleet Tactical Development and  
and Evaluation

PROJECT NUMBER: R0151

PROJECT TITLE: Intertype Tactical  
Development and Evaluation

- (U) (\$82) Continue Development of Sea Combat Commander Procedures.
  - (U) (\$75) Develop Tactical Aircraft (TACAIR) tactics against maritime threats.
  - (U) (\$100) Develop procedures for identification of surface contacts.
  - (U) (\$135) Develop strike tactics against camouflage, concealment and deception land targets.
  - (U) (\$113) Develop USQ-113 communication electronic attack procedures.
  - (U) (\$212) Develop Network Centric Anti-Surface Warfare (ASW) Tactics.
  - (U) (\$150) Develop HELLFIRE missile tactics.
  - (U) (\$75) Develop acoustic jamming procedures.
  - (U) (\$124) Develop HARPOON (surface platform) littoral tactics.
  - (U) (\$288) Develop BG tactics to counter influence mine threats.
  - (U) (\$115) Develop MCM tactics for AQS-14.
  - (U) (\$140) Develop BG ASW Tactics.
  - (U) (\$212) Develop tactics to minimize mast exposure vulnerability to new technologies.
  - (U) (\$51) Develop FLIR tactics to provide periscope or snorkel detection.
  - (U) (\$50) Develop procedures associated with the AEGIS cruiser Area Air Defense Commander cell.
  - (U) (\$175) Initiate development of MCM-1 sweeping tactics.
  - (U) (\$45) Tactical Development and Evaluation program support.
  - (U) (\$57) Program Support.
3. (U) FY 2000 PLAN:
- (U) (\$260) Refine/evaluate weapon selection/employment.
  - (U) (\$188) Continue development of TACAIR tactics against maritime threats.
  - (U) (\$100) Update communication electronic attack tactics.
  - (U) (\$125) Update strike tactics against land targets.
  - (U) (\$130) Continue development of network centric ASW tactics.

R-1 Line Item 136

Budget Item Justification  
(Exhibit R-2, page 3 of 5)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROGRAM ELEMENT TITLE: Fleet Tactical Development and  
and Evaluation

PROJECT NUMBER: R0151

PROJECT TITLE: Intertype Tactical  
Development and Evaluation

- (U) (\$188) Continue development of surface weapon tactics.
- (U) (\$83) Evaluate/update FLIR tactics.
- (U) (\$262) Continue development of BG tactics against mine threats.
- (U) (\$147) Continue development of MCM sweeping tactics.
- (U) (\$140) Continue Development of MCM-1 Improved Influence Sweeping Tactics.
- (U) (\$238) Develop tactics for countering non-acoustic ASW threats.
- (U) (\$125) Develop P-3 SLAM tactics.
- (U) (\$322) Initiate Development of SSN-21 tactics.
- (U) (\$140) Develop Shipboard Insitu Measuring and Analysis System II tactical capabilities.
- (U) (\$125) Develop EA-6B Force Simulation Capabilities.
- (U) (\$125) Develop Multi-Platform Magnetic Anomaly Detection (MAD) Search/Localization tactics.
- (U) (\$203) Develop Undersea Warfare (USW) command, control, communications, computer and intelligence (C<sup>4</sup>I) tactical capabilities.
- (U) (\$100) Develop coordinated Air/Mine Inshore Undersea Warfare (MIUW) tactics.
- (U) (\$45) Tactical Development and Evaluation.
- (U) (\$57) Program Support.

## B. (U) PROGRAM CHANGE SUMMARY:

(U) FY 1999 President's Budget:  
(U) Appropriated Value:  
(U) Adjustments from FY 1999 PRESBUDG:  
(U) FY 2000 OSD/OMB SUBMISSION

<u>FY 1998</u>	<u>FY 1999</u>	<u>FY2000</u>
2,650	2,748	2,823
-	2,748	-
-26	-9	+280
2,624	2,739	3,103

## (U) CHANGE SUMMARY EXPLANATION:

R-1 Line Item 136

Budget Item Justification  
(Exhibit R-2, page 4 of 5)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROGRAM ELEMENT TITLE: Fleet Tactical Development and  
and Evaluation

PROJECT NUMBER: R0151

PROJECT TITLE: Intertype Tactical  
Development and Evaluation

(U) Funding: FY 1998 adjustment is due to Small Business Innovative Research reduction (-22) and minor adjustment (-4). FY 1999 adjustment is due to economic assumption (-6), Civilian Personnel Underexecution (-3). The FY 2000 increase is due to Civilian Pay Rate (+9), Navy Working Capital Fund adjustment (+16), Non Pay Inflation (-45) and Virtual Missile Range (+300).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 136

Budget Item Justification  
(Exhibit R-2, page 5 of 5)

# UNCLASSIFIED



# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information Services

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0835	Technical Information Services 725	943	964	959	950	936	948	987	CONT.	CONT.
R2296	Federal Laboratory Consortium 246	0	0	0	0	0	0	0	CONT.	CONT.
R2322	Acquisition Center of Excellence								CONT.	CONT.
	5,551	5,052	5,732	4,827	3,454	2,456	2,433	2,478		
Total	6,522	5,995	6,696	5,786	4,404	3,392	3,381	3,465	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Technical Information Services provides support to achieve affordability in the development of Navy systems and reduction of life-cycle costs through the facilitation of advanced technology associations between U.S. industry and the Navy. The goals for project R0835 are met through the following:

- (U) Navy leverage of the industry independent research and development science and technology base by facilitation of voluntary Technical Information Meetings between Navy, DOD components, and the private sector.
- (U) Support for the Navy Acquisition Research and Development Center to provide the private sector with information on Navy research and development requirements and advanced acquisition information.
- (U) Transfer of appropriate Navy-developed innovative concepts and inventions to the private sector for purposes of commercialization (Public Law 96-480, Federal Technology Transfer Act of 1986) through Cooperative Research and Development Agreements and Cooperative Agreements through Offices of Research and Technology Applications.
- (U) Promotion of advanced information acquisition and distribution techniques (in conjunction with the Defense Technical Information Center) to disseminate research, development, and technology transfer efforts of Navy components, including the networking of Navy components' technology transfer databases (Scientific and Technical Information Program).

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 1 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information Services

- (U) Support for controlled access to, and exchange of, scientific and technical information by Navy/DOD components and present/potential contractors (Navy Potential Contractor Program).
- (U) This program also provides the DON interface to Director, Defense Research and Engineering, Office of Technology Transition for matters relating to policy and DOD reporting requirements for technology transfer.

(U) The Acquisition Center of Excellence program conducts the enabling research and development of the methods, processes and techniques that form the foundations for developing the databases, infrastructure, and tools that will lead to the reduction of acquisition cycle time, reduction of system total ownership cost and the collection, analysis and data dissemination to improve decision making in the DoN. The goals for project R2322 are met through the following:

- (U) Development of the advanced tools that can be used for evaluating alternate business strategies so that program managers may readily make informed and timely business strategy decisions.
- (U) Development of the methods, techniques, and the advanced tools associated with navigation, access, retrieval, and storage of diverse data types that exist in very large distributed databases so that program managers can rapidly find, develop, and assess information critical to program comprehension and decision making.
- (U) Development of the methods, techniques, and the advanced systems associated with the effects of information visualization, presentation and interaction in a learning environment for the purpose of enhancing the processes for evaluating, transforming, interacting, and communicating that information to a broad set of users.

(U) The Federal Laboratory Consortium (FLC) for Technology Transfer is an organization of Federal Research and Development Laboratories and Centers chartered by the "Stevenson-Wydler Technology Innovation Act of 1980" as amended by Public Law 99-502, the "Federal Technology Transfer Act of 1986." It was established to identify and mobilize the necessary resources to provide the environment, the organization, and the necessary technology transfer mechanisms required to facilitate the fullest possible use of federally sponsored R&D results by both public and private sector potential users. Funding of the FLC is a recurring requirement with the yearly funding level based on an amount equal to eight thousandths of one percent (0.008%) of each Federal department/agency Research and Development (R&D) budget.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations required for general research and development use.

(U) PROGRAM CHANGE FOR TOTAL P.E.:

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 2 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information Services

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	3,166	8,513	967
(U) Appropriated Value:	-	6,013	-
(U) Adj from FY 1999 President's Budget:	+3,356	-2,518	+5,729
(U) FY 2000 President's Budget Submission:	6,522	5,995	6,696

## (U) CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 adjustment is due to SBIR assessment (-81), update to reflect actual execution (-10), Federal Technology Transfer Funding (+248), and ACE below threshold reprogramming (+3,199). FY 1999 adjustments due to Congressional Undistributed Reductions (-18), and FY99 congressional reduction for slow enterprise development (-2,500). FY 2000 adjustments due to Navy Working Capital Fund Rates (+16), Civilian Pay Rates (+10), Non Pay Inflation (-97), and Acquisition Center of Excellence Funding Adjustment (+5,800).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 3 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information Services

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0835 Technical Information Services	725	943	964	959	950	936	948	987	CONT.	CONT.

- A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides support to achieve affordability in the development of Navy systems and reduction of life-cycle costs through the facilitation of advanced technology associations between U.S. industry and the Navy. These goals are met through the following:
- (U) Navy leverage of the industry independent research and development science and technology base by facilitation of voluntary Technical Information Meetings between Navy, DOD components, and the private sector.
  - (U) Support for the Navy Acquisition Research and Development Center (NARDIC) to provide the private sector with information on Navy research and development requirements and advanced acquisition information.
  - (U) Transfer of appropriate Navy-developed innovative concepts and inventions to the private sector for purposes of commercialization (Public Law 96-480, Federal Technology Transfer Act of 1986) through Cooperative Research and Development Agreements and Cooperative Agreements (CRADAs) through Offices of Research and Technology Applications.
  - (U) Promotion of advanced information acquisition and distribution techniques (in conjunction with the Defense Technical Information Center (DTIC)) to disseminate research, development, and technology transfer efforts of Navy

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 4 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605804N  
PROGRAM ELEMENT TITLE: Technical Information

PROJECT NUMBER: R0835  
PROJECT TITLE: Technical Information Services

components, including the networking of Navy components' technology transfer databases (Scientific and Technical Information Program (STIP)).

- (U) Support for controlled access to, and exchange of, scientific and technical information by Navy/DOD components and present/potential contractors (Navy Potential Contractor Program (NPCP)).

This program also provides the DON interface to Director, Defense Research and Engineering (DDR&E), Office of Technology Transition for matters relating to policy and DOD reporting requirements for technology transfer.

## (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

### 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$725) Maintained coordination efforts with Systems Commands, Program Executive Offices, Direct Reporting Program Managers, and Navy laboratories and warfare centers to leverage industry research and development efforts to meet Navy performance/affordability needs and encouraged submission of technical data by the private sector to the DTIC CD-ROM in order to help integrate defense production with the commercial industrial base. Supported the NARDIC as the primary outreach resource to the private sector. Supported NARDIC development of electronic bulletin board residing on the World Wide Web to facilitate advance commercial planning in support of Navy/Marine Corps technology needs. Completed development of the networked technology transfer database capability at the laboratory, the ONR, and DDR&E levels, which enables the tracking of technology transfer efforts. In FY 1998, Navy laboratories entered 134 new agreements in areas such as the following: Fiber optic sensor systems for geophysical exploration; Marine archeological techniques for artifact location; SWATH ship for military and civilian uses; Navy-developed network-centric, multi-tiered client/server for easy navigation to and management of information; modular, reconfigurable, distributed, interactive radar simulation; malaria vaccine research; open circuit dive regulator for cold water diving; composite materials and fabrication techniques for spacecraft components; advanced state-of-the-art printed wiring board manufacturing. Supported the Navy Offices of Research and Technology Applications (ORTA) through the National Technology Transfer Center (NTTC) Entrepreneurial Training Apprenticeship Program (ETAP) which provided minority students to work in the ORTA supporting technical information services and technology transfer activities.

### 2. (U) FY 1999 PLAN:

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 5 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information

PROJECT NUMBER: R0835

PROJECT TITLE: Technical Information Services

- (U) (\$929) Maintain coordination efforts with Systems Commands, Program Executive Offices, Direct Reporting Program Managers, and Navy laboratories and warfare centers to leverage industry research and development efforts to meet Navy performance/affordability needs and encourage submission of technical data by the private sector to the DTIC database in order to help integrate defense production with the commercial industrial base. Support DoD effort to migrate voluntary private sector technical submissions from CD-ROM medium to internet-based exchange. Support the NARDIC as the primary outreach resource to the private sector, including development and maintenance of open and password-protected electronic bulletin boards residing on the World Wide Web. Investigate incorporation of NPCP information into networked tech transfer database. Support the Navy ORTA through the NTTC ETAP which provides minority students to work in the ORTA supporting technical information services and technology transfer activities.
  - (U) (\$14) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.
3. (U) FY 2000 PLAN:
- (U) (\$964) Maintain coordination efforts with Systems Commands, Program Executive Offices, Direct Reporting Program Managers, and Navy laboratories and warfare centers to leverage industry research and development effort to meet Navy performance/affordability needs and encourage submission of technical data by the private sector to the DTIC database in order to help integrate defense production with the commercial industrial base. Support the NARDIC as the primary outreach resource to the private sector, including maintenance of open and password-protected electronic bulletin boards residing on the World Wide Web. Incorporate NPCP information into networked tech transfer database. Support the Navy ORTA through the NTTC ETAP which provides minority students to work in the ORTA supporting technical information services and technology transfer activities.
- B. (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- (U) RELATED RDT&E: Not applicable.

R-1 Line Item 138

# UNCLASSIFIED

Budget Item Justification  
(Exhibit R-2, page 6 of 12)

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605804N      PROJECT NUMBER: R0835  
PROGRAM ELEMENT TITLE: Technical Information      PROJECT TITLE: Technical Information Services

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 7 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R2322										
Acquisition Center of Excellence	5,551	5,052	5,732	4,827	3,454	2,456	2,433	2,478	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program conducts the enabling research and development of the methods, processes and techniques to assist the Department of the Navy acquisition community to shorten acquisition cycle time and to reduce system total ownership costs. The Acquisition Center of Excellence (ACE) is comprised of three primary elements: (1) An 21,000 square-foot facility located in Building 22 of the Washington Navy Yard; (2) A team of government and contractor personnel who are experts in various aspects of DoD acquisition processes; and (3) An advanced system of computers, decision support applications and visualization displays. These elements are focused on facilitating a dramatic cultural change in the way DoN weapons systems are acquired. The program will develop techniques, methodologies and concepts to achieve these changes through coordinated efforts using the acquisition experts, the Acquisition Center of Excellence facility and the advanced computer-based decision support systems. The near term objective of the program are to provide support to DoN Systems Commands and Program Managers in six specific areas that will result in a reduction of total ownership costs and enhanced decision making capability. Full scale operations commenced in February 1998. The support areas include:

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 8 of 12)

# UNCLASSIFIED



# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information

PROJECT NUMBER: R2322

PROJECT TITLE: Acquisition Center of Excellence

1. (U) PRE-AWARD SUPPORT ASSISTANCE: Pre-Award Support Assistance is consulting assistance delivered by an ASN(RDA) team of Acquisition Reform experts. This assistance will span a variety of pre-award support issues including the transformation of operational requirements into program objectives, acquisition strategy, Request For Proposals (RFP) development and source selection. The team draws on advanced acquisition tools and subject matter experts from diverse acquisition disciplines to review, assess, recommend approaches, share recent lessons learned and suggest alternative solicitation and contract provisions. The ACE team will support acquisition programs in eight specific Pre-Award Support Assistance areas: (1) development of market research programs, (2) development of performance based requirements for acquisitions, (3) development of effective risk management strategies, (4) application of Electronic Commerce/Electronic Data Interchange (EC\EDI) to enhance the acquisition process, (5) application of Total Ownership Cost(TOC)/Cost As An Independent Variable (CAIV) to contracts, (6) reviewing RFPs for acquisition reform, (7) development of virtual RFPs, and (8) electronic source selection.

2. (U) TOTAL OWNERSHIP COST (TOC)/COST AS AN INDEPENDENT VARIABLE (CAIV): TOC/CAIV includes in-direct costs and costs incurred to other programs as a result of decisions within a program and includes effects on infrastructure. The Acquisition Center of Excellence team will consult programs to support the application of TOC/CAIV, and on metrics and measures that programs could consider for management. Acquisition Center of Excellence staff assists in the development of the Navy policy; are in touch with industry on their initiatives; and can advise on best practices. TOC/CAIV offerings include the following: Investment balance analysis; affordability analysis; cost reduction activity; design trades; cost estimation; systems dynamics cost modeling; risk estimation & management; activity-based costing/management.

3. (U) BUSINESS WARGAMING: The Acquisition Center of Excellence will support the conduct of business wargames for the Navy Acquisition Executive, program managers and staffs. Business wargaming enables the program manager to simulate a realistic business environment and to see the possible reaction to his actions by other managers. The three wargaming functions performed at the Acquisition Center of Excellence include: (1) to develop and test solutions in a benign environment; (2) to train acquisition management teams; and (3) to enhance PM strategic decision making skills. Acquisition Center of Excellence provides a framework for business wargames with its data access and visualization capability, access to models and data, decision support processes and tools. The Acquisition Center of Excellence will access senior managers from the government and industry to play key roles on the red or blue teams to more effectively simulate business operations. Acquisition Center of Excellence will use gaming methodologies proven through actual application in business and government. Wargaming techniques include such elements as suspension of reality and

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 9 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605804N      PROJECT NUMBER: R2322  
PROGRAM ELEMENT TITLE: Technical Information      PROJECT TITLE: Acquisition Center of Excellence

alternative role playing; use of decision support tools and systems dynamic modeling; background information to support players' roles, and just-in-time training when required.

4. (U) SYMPOSIA/CONFERENCES/WORKSHOPS: Workshops will include many topics including CAIV, Electronic Source Selection, Simulation Based Acquisition and Risk Management, Small Business Innovation Research (SBIR) program and Best Manufacturing Practices (BMP) highlights. Presenters will discuss current initiatives and use the Acquisition Center of Excellence's high performance computing technology and synthetic environments to demonstrate advanced techniques. Proceedings will be transmitted via voice, data, and video to remote sites, when appropriate to reduce costs and to maximize visibility. Through these workshops and symposia ACE will assist in the deployment of the products and services developed at all the Navy Manufacturing Technology (MANTECH) Centers of Excellence.

5. (U) DECISION SUPPORT & ANALYSIS: Acquisition Center of Excellence Decision Support & Analysis provides dedicated environment for data gathering, analysis and decision making, to improve program management operational efficiency through the use of advanced meeting facilities and systems. Acquisition Center of Excellence provides the following capabilities: fact-based decision making; facilitated small group processes; large screen projections to support visual data synthesis; connectivity to enable rapid data access; state-of-the art software tools for data analysis.

6. SIMULATION BASED ACQUISITION The concept of Simulation Based Acquisition (SBA) refers to the application of computer systems to enable the acquisition community to proceed from requirements generation through system development, testing and simulated operations before committing to expenditure of significant funding for actual construction of the system.

## (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

### 1. (U) FY 1998 ACCOMPLISHMENTS:

(U) (\$ 5,551)

- (U) Continued development and deployment of program manager tools focused on streamlining operations and providing a central repository of best business practices.
- (U) Initiated the development of the first generation dynamic system model(s) based on CAIV techniques.

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 10 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information

PROJECT NUMBER: R2322

PROJECT TITLE: Acquisition Center of Excellence

- (U) Continued development of the ACE information repository and the associated connections to the other DoD/DoN databases.
- (U) Initiated process/performance templates for real time access of multimedia data for acquisition program managers.
- (U) Defined and executed decision support and analysis collaboration to assist program managers in resolving real-world acquisition program issues.
- (U) Completed the establishment of the Acquisition Center of Excellence in the Washington Navy Yard.
- (U) Conducted approximately 150 interactions with over 300 different government and industry organizations, contacting greater than 3,500 individuals.
- (U) Conducted workshops and symposia addressing total ownership cost, electronic source selection tools, and pre-contract award support activities.
- Conducted wargames supporting the Chief of Naval Operations as well as acquisition program managers.

2. (U) FY 1999 PLAN:

(U) (\$ 4,976)

- (U) Continue to define and execute acquisition exercises with program managers.
- (U) Continue to provide Program Managers Assistance Group for any program manager requiring support.
- (U) Conduct acquisition reform-related symposia and workshops addressing pre-award support assistance, TOC/CAIV, Decision support and analysis, and simulation-based acquisition.
- (U) Initiate development of the SBA enterprise.
- (U) Initiate development of the required structured methods, smart product model structures, and concurrent processes in conjunction with the efforts in DARPA, ONR, DMSO, DoNMSO, DISA, and industry.
- (U) (\$76) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2000 PLAN:

(U) (\$5,732)

- (U) Continue to develop the concepts and methodologies for SBA use by program offices.

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 11 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N

PROGRAM ELEMENT TITLE: Technical Information

PROJECT NUMBER: R2322

PROJECT TITLE: Acquisition Center of Excellence

- (U) Develop and implement workshops for DoN wide deployment in TOC/CAIV, Acquisition streamlining.
- (U) Continue implementation of electronic source selection best practices.
- (U) Develop tools for use in Pre-Award Support Assistance efforts, streamline practices and implement lessons learned.
- (U) Continue implementation of Wargaming techniques among program offices including system reviews of requirement documents and acquisition strategies.
- (U) Provide the tools to enhance decision support process and analysis at all levels of DoN leadership.
- (U) Establish cooperative agreements with private industry to share decision support tools and techniques.
- (U) Provide the means for centrally sharing information between private industry and DoN activities related to streamlined acquisition, deployment and support of weapon systems.
- (U) Investigate and validate a fee for service system to allow direct service funding by users.

B. (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 138

Budget Item Justification  
(Exhibit R-2, page 12 of 12)

# UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

### EXHIBIT R-2, FY 2000 RDT&E BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 1999

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605853N**  
**PROGRAM ELEMENT TITLE: Management, Technical and International Support**

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0149	International Cooperative RDT&E									
	2,502	1,066	1,987	2,018	2,081	2,107	2,142	2,229	CONT.	CONT.
R1767	Naval War College/Center for Naval Warfare Studies									
	2,072	1,393	2,314	2,345	2,385	2,427	2,480	2,532	CONT.	CONT.
X2221	Assessment Program									
	10,582	6,831	12,947	13,233	13,473	13,178	13,466	13,760	CONT.	CONT.
X2222	Naval Modeling & Simulation									
	0	8,335	0	0	0	0	0	0		15,174
W2347	Test and Evaluation Modeling and Simulation									
	0	0	2,199	2,240	2,549	2,744	2,780	2,895	CONT.	CONT.
<b>TOTAL:</b>	15,156	17,625	19,447	19,836	20,488	20,456	20,868	21,416	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) provides management and technical support for several national and international projects:

(U) Project R0149 provides program management, execution, and support to implement a broad range of cooperative naval research and development (R&D) initiatives with allied and friendly nations. Potential cooperative programs are pursued to fulfill established operational requirements, enhance U.S./allied interoperability and standardization, obtain unique foreign technologies, and reduce U.S. developmental and production costs.

(U) Project R1767 provides funding for Naval War College (NWC) research activities, which serve as a focal point, stimulus, and major source of strategic and campaign thought within the Navy. These efforts generate

R-1 Line Item 139

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, page 1 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

### EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

strategy and campaign alternatives, provide for evaluation through wargaming methodologies, and provide recommendations to the Chief of Naval Operations (CNO) and fleet commanders regarding the formulation and execution of strategy.

(U) Project X2221 provides analytical and management support for the Planning/Assessment process. This project supports the development of annual Integrated Warfare Architectures (IWARS)/Chief of Naval Operations Program Assessment Memorandum (CPAM)/Joint Warfighting Capability assessments which provide the analytical underpinnings and basis for programmatic decisions made by the Navy's top leadership regarding integration of Navy warfare/support requirements.

(U) Project X2222 provides the overarching policy, coordination and technical support for Naval modeling focus, coordination and oversight. It enhances development and execution of a coordinated Naval M&S program, including distributed simulation tool development, M&S incorporation with C4I systems and simulation. This project responds to Congressional guidance to improve modeling and simulation embedded training systems, and an orderly process of model Verification, Validation and Accreditation required by current directives.

(U) Project W2347 enhances the Test and Evaluation (T&E) efforts of the Navy by providing policy, coordination, and technical support for the Modeling and Simulation (M&S) program. The mission is to promote and standardize modeling and simulation for interoperability and re-use within and between programs and across the Research Development Test and Evaluation community. This also provides funds to incrementally establish the Joint Synthetic Test and Evaluation Battlespace (JSTEB) Joint Operational Requirements document. Test and Evaluation Modeling and Simulation (TEMS) is required to reduce the cost, schedule, and risk of acquisition programs by supporting the early integration of M&S capabilities into the T&E process.

B. (U) PROGRAM CHANGE SUMMARY: FY 1998 adjustments are due to SBIR reduction (-444K) and an increase of (+527K) for Chief of Naval Operations Strategic Studies Group expansion support.

R-1 Line Item 139

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, page 2 of 17)

UNCLASSIFIED

**UNCLASSIFIED**  
**FY 2000 President's Budget Estimate**

**EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605853N**

**PROGRAM ELEMENT TITLE: Management, Technical and International Support**

**C. (U) OTHER PROGRAM FUNDING SUMMARY:**

Project R0149: Related RDT&E PE 0603790D (Nunn Armaments Cooperation)

Project X2222 FY1998 FY1999 FY2000  
O&M, N PE0204662N/1C1C (Partial)  
0 774 See PE 0308601N

Project W2347, Related RDT&E P.E. 0604759N: Major T&E Investment and P.E. 0605864N: Test and Evaluation Support

D. (U) ACQUISITION STRATEGY: Not applicable.

E. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 139

Exhibit R-2, RDT&E Budget Item Justification  
(Exhibit R-2, page 3 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 1999  
PROJECT NUMBER: R0149  
PROJECT TITLE: International Cooperative RDT&E

BUDGET ACTIVITY: 6  
PROGRAM ELEMENT: 0605853N  
PROGRAM ELEMENT TITLE: Management, Technical and International Support

(U) COST: (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0149 International Cooperative RDT&E	2,502	1,066	1,987	2,018	2,081	2,107	2,142	2,229	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides program management, execution, and support to implement a broad range of cooperative naval research and development (R&D) initiatives with allied and friendly nations. Potential cooperative programs are pursued to fulfill established operational requirements, enhance U.S./allied interoperability and standardization, obtain unique foreign technologies, and reduce U.S. developmental and production costs. Such efforts result in:

- (U) Development and negotiation of approximately 25 International RDT&E Agreements annually with allied and friendly nations.
- (U) Execution of over 300 information exchange annexes.
- (U) Participation in armaments cooperation for a including the Conference of NATO Armaments Directors groups (e.g., the NATO Naval Armaments Group), Senior National Representative (SNR) meetings, the Technical Cooperative Program and Scientific Committee National Representatives meetings.
- (U) Promote research initiatives at the NATO Supreme Allied Command Atlantic, Undersea Research Center (SACLANTCEN) in La Spezia, Italy in the areas of anti-submarine warfare (ASW), mine countermeasures (MCM), and littoral warfare.
- (U) Participation in the Engineering and Scientist Exchange Program (ESEP).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:
  - (U) (\$330) Continued to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
  - (U) (\$440) Continued to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.



# UNCLASSIFIED

## FY 2000 President's Budget Estimate

### EXHIBIT R-2a, FY 2000 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

DATE: FEBRUARY 1999

PROJECT NUMBER: R0149

PROJECT TITLE: International Cooperative RDT&E

- (U) (\$500) Continued to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
  - (U) (\$10) Provided support to Acquisition Integrated Product Teams (IPTs) in evaluating international cooperative alternatives in development of DON programs as well as support to OSD International Cooperation Opportunities Group (ICOGs) regarding DON requirements and initiatives.
  - (U) (\$182) Maintained a level of Navy participation in the ESEP at approximately three scientists/engineers. Continued to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
  - (U) (\$20) Continued to fund the efforts of SYSCOMs and laboratories in researching and negotiating international cooperative programs.
  - (U) (\$126) Continued to fund DON efforts to promote research initiatives at the NATO SACLANTCEN in the areas of ASW, MCM, and littoral warfare.
  - (U) (\$894) Funds were executed under the NATO Cooperative R&D project R2293 (PE0603790) for the Advanced Steel Technology (AST) cooperative R&D project with Japan which was certified by USD(a&T) in accordance with Title 10 U.S. Code Section 2350a.
2. (U) FY 1999 PLAN:
- (U) (\$129) Continue to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
  - (U) (\$250) Continue to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.
  - (U) (\$420) Continue to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
  - (U) (\$25) Provide support to Acquisition IPTs in evaluating international cooperative alternatives in development of DON programs as well as support to OSD ICOGs regarding DON requirements and initiatives.
  - (U) (\$80) Maintain a level of Navy participation in the ESEP at approximately three scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

DATE: FEBRUARY 1999

PROJECT NUMBER: R0149

PROJECT TITLE: International Cooperative  
RDT&E

better target assignments with emerging technologies and programs at foreign research establishments.

- (U) (\$25) Continue to fund the efforts of SYSCOMS and laboratories in researching and negotiating international cooperative programs.
- (U) (\$133) Continue to fund DON efforts to promote research initiatives at the NATO SACLANTCEN in the areas of ASW, MCM, and littoral warfare.
- (\$4) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 14 USC 638.

### 3. (U) FY 2000 PLAN:

- (U) (\$370) Continue to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
- (U) (\$515) Continue to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.
- (U) (\$598) Continue to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
- (U) (\$50) Provide support to Acquisition IPTs in evaluating international cooperative alternatives in development of DON programs as well as support to OSD ICOGs regarding DON requirements and initiatives.
- (U) (\$400) Increase the level of Navy participation in the ESEP at approximately six scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
- (U) (\$54) Continue to fund the efforts of SYSCOMS and laboratories in researching and negotiating international cooperative programs.

### B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding: FY 1998 adjustments are due to SBIR Reduction (-30), FY98 update (+26), comparability adjustment (+854) FY1999 ADJUSTMENT IS DUE TO REVISED Economic Assumption (-2), and Congressional

**UNCLASSIFIED**  
**FY 2000 President's Budget Estimate**

EXHIBIT R-2a, FY 2000 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605853N**

**PROGRAM ELEMENT TITLE: Management, Technical and International Support**

**DATE: FEBRUARY 1999**

**PROJECT NUMBER: R0149**

**PROJECT TITLE: International Cooperative  
RDT&E**

Reduction (-1), 089). FY 2000 adjustment is due to Program Adjustments (241), NWCF rate adjustment (+4), Civilian Pay Rates (+2), and Non Pay Inflation (-29).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

- (U) PE 0603790D (Nunn Armaments Cooperation)
- (U) PE 0605130D (Foreign Comparative Testing)
- (U) PE 0603790N (NATO Cooperative Research and Development)

D. (U) SCHEDULE PROFILE: Not applicable.

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

PROJECT NUMBER: R1767  
PROJECT TITLE: Naval War College-  
Center for Naval Warfare Studies

(U) COST: (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R1767 Naval War College/Center for Naval Warfare Studies	2,072	1,393	2,314	2,345	2,385	2,427	2,480	2,532	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Naval War College (NWC) research activities serve as a focal point, stimulus, and major source of strategic and campaign thought within the Navy. These efforts generate strategy and campaign alternatives, provide for evaluation through wargaming methodologies, and provide recommendations to the Chief of Naval Operations (CNO) and fleet commanders regarding the formulation and execution of strategy.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$1,450) Conducted strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as peacekeeping and peace enforcement, environmental law and freedom of navigation, and direct fleet support.
- (U) (\$562) Conducted major war games culminating in Annual Global Wargame.
- (U) (\$60) Provided for selected NWC students to conduct advanced research projects.

(U) FY 1999 PLAN:

- (U) (\$716) Conduct strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$615) Conduct major war games culminating in Global '99.
- (U) (\$62) Provide for selected NWC students to conduct advanced research projects.

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (R1767)  
(Exhibit R-2a, page 8 of 17)

UNCLASSIFIED

**UNCLASSIFIED**  
**FY 2000 President's Budget Estimate**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605853N**

**PROGRAM ELEMENT TITLE: Management, Technical & International Support**

**PROJECT NUMBER: R1767**  
**PROJECT TITLE: Naval War College-**  
Center for Naval Warfare Studies

(U) FY 2000 PLAN:

- (U) (\$1,623) Conduct strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$627) Conduct major wargames culminating in Global '99.
- (U) (\$64) Provide for selected NWC students to conduct advanced research projects.

B. (U) PROGRAM CHANGE SUMMARY: FY98 adjustment is due to SBIR assessment of (-20), and actual execution update of (+700). FY1999 adjustment is due to congressional reduction to program element net growth (-916) and FY 1999 economic assumptions (-3). FY00 of (-33) for Non Pay Inflation.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (R1767)  
(Exhibit R-2a, page 9 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221

PROJECT TITLE: Assessment Program

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2221 Assessment Program	10,582	6,831	12,947	13,233	13,473	13,178	13,466	13,760	CONT	CONT

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: X2221, Assessment Program consolidates analytical and management support to the Planning segment of the Navy Planning, Programming and Budgeting System (PPBS). This project supports the development of annual Integrated Warfare Architectures (IWARS) and Chief of Naval Operations Program Assessment Memorandum (CPAM) assessments, which provide analytical underpinnings and basis for programmatic decisions of the Navy's top leadership regarding the integration of Navy warfare/support requirements. This program provides the Navy input to the VCJCS lead Joint Warfighting Capability Assessment (JWCA) process. Assessment program develops tools and analytical methodologies based on standards and technical recommendations as provided by the Naval Modeling and Simulation Program and provides technical leadership for the analysis functional area of Naval Modeling and Simulation.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:
  - (U) (\$ 149) Developed, updated and maintained detailed level Navy Standard scenarios based on Defense Planning Guidance.
  - (U) (\$7,932) Performed Joint Mission Area/Support Area assessments to support the interactive Investment Balance Review process; efforts included Joint Strike, Joint Surveillance, Strategic Deterrence, Forward Presence, Joint Littoral, Joint SEW/I, and Strategic Sealift/Protection and their integration into the Investment Balance Review. Provided Navy input to JWCA process.

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (X2221)  
(Exhibit R-2a, page 10 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

### EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

#### BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

DATE: FEBRUARY 1999

PROJECT NUMBER: X2221

PROJECT TITLE: Assessment Program

- (U) (\$1,426) Developed and accredited Joint Mission Area/Support Area tools and improve analytic methodology.
- (U) (\$1,075) Using the standard simulation and database architecture developed by Naval Modeling and Simulation, re-hosted legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Developed new tools that utilize models in the standard simulation and database architecture. Coordinated and supported Joint Analytical Model Improvement Program (JAMIP).
- 2. (U) FY 1999 PLAN:
  - (U) (\$ 111) Develop, update and maintain detailed level Navy Standard scenarios based on Defense Planning Guidance.
  - (U) (\$4,791) Develop Integrated Warfare Architectures (IWARs) and perform assessments and develop the Chief of Naval Operations Program Assessment Memorandum (CPAM). Areas of focus include Sea Dominance; Air Dominance; Power projection; Deterrence; Sensor Management/Information Superiority; Sustainment; Infrastructure; Manpower and Personnel; Readiness; Training and Education; Technology; and Force Structure. Provide Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
  - (U) (\$1,056) Continue to develop and accredit IWAR and CPAM tools and improve analytic methodology.
  - (U) (\$873) Using the standard simulation and database architecture developed by Naval Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Develop new tools that utilize models in the standard simulation and database architecture. Coordinate/support Joint Analytical Model Improvement Program (JAMIP).
- 3. (U) FY 2000 PLAN:
  - (U) (\$ 213) Develop, update and maintain detailed level Navy Standard scenarios based on Defense Planning Guidance.
  - (U) (\$9,053) (U) Develop Integrated Warfare Architectures (IWARs) and perform assessments and develop the Chief of Naval Operations Program Assessment Memorandum (CPAM). Areas of

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (X2221)  
(Exhibit R-2a, page 11 of 17)

UNCLASSIFIED

**UNCLASSIFIED**  
**FY 2000 President's Budget Estimate**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605853N**

**PROGRAM ELEMENT TITLE: Management, Technical and International Support**

**DATE: FEBRUARY 1999**

**PROJECT NUMBER: X2221**

**PROJECT TITLE: Assessment  
Program**

focus include Sea Dominance; Air Dominance; Power projection; Deterrence; Sensor Readiness; Training and Education; Technology; and Force Structure. Provide Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.

- (U) (\$2,016) Continue to develop and accredit IWAR and CPAM tools and improve analytic methodology.
- (U) (\$1,665) Using the standard simulation and database architecture developed by Naval Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Develop new tools that utilize models in the standard simulation and database architecture. Coordinate/support Joint Analytical Model Improvement Program (JAMIP).

B. (U) PROGRAM CHANGE SUMMARY: FY2000 funds increased due to 1) NWCf rates +\$13K; 2) Civilian pay rates +10; 3) Non Pay Inflation -187; Working Capital -1.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable

(U) RELATED RDT&E: Not applicable

D. (U) SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 139**

**Exhibit R-2a, RDT&E Budget Item Justification (X2221)**  
**(Exhibit R-2a, page 12 of 17)**

**UNCLASSIFIED**



# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605853N**      **DATE: FEBRUARY 1999**  
**PROGRAM ELEMENT TITLE: Management, Technical & International Support**      **PROJECT NUMBER: X2222**  
**PROJECT TITLE: Naval Modeling & Simulation**

(U)	COST (Dollars in thousands)									
PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2222 Naval Modeling & Simulation	0	8,335	0	0	0	0	0	0		15,174

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Funds the efforts of Navy Modeling and Simulation (M&S) Management Office and the Department of the Navy Technical Support Group (TSG). Supports technical and management initiatives directed by Congress, DoD and SECNAV with the aim of bringing organization and focus to the development and use of M&S tools throughout Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S; represents Navy interests in Joint/other Agency. Funds efforts to define and coordinate execution of a Navy M&S program to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Effective FY98, efforts were organized around 4 product areas: (1) Engineering Studies and Analysis, to define the feasibility and applicability of proposed standards to Navy and to investigate service unique requirements for standards or guidance; (2) Products and Services, to develop the policy, standards, and common tools and services necessary to guide more efficient development and use of M&S across Navy; this includes development and management of the Navy M&S Information System (NMSIS), Navy counterpart to the DOD M&S Resource Repository, to provide a central M&S information resource to reduce stovepiped development, promote tool reuse and support informed M&S investment decisions; (3) M&S Quality Assurance Program, to establish and manage a disciplined process of model verification, validation and accreditation (VV&A) required by current directives; (4) Simulation Experiments, to test distributive simulation technology in fleet exercises, experiments, and pilot efforts which demonstrate and examine the value and limitations of proposed standards (such as HLA and JMASS) to mission and program requirements.

Note: In FY 2000 a Technical Change moves the Naval Modeling and Simulation X2222 Project from Program Element 0605853N to Program Element 0308601N in order to more accurately describe the Naval Modeling and Simulation Project.

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (X2222)  
 (Exhibit R-2a, page 13 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEBRUARY 1999

PROJECT NUMBER: X2222

PROJECT TITLE: Naval Modeling & Simulation

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS: SEE PE 0308601N
2. (U) FY 1999 PLAN:
  - (U) (\$1,440) Engineering Studies and Analysis: Conduct engineering studies and analysis aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy and at investigating service unique requirements for standards or guidance. Individual study thrusts will focus on developing or evaluating approaches to optimize training, assessments and acquisition functional/mission objectives through more efficient development and use of M&S. Phase II of Maritime Virtual Environmental Data Specification (MARVEDS), will support a team of representatives from several facets of the acquisition community, together with participants from ONR and Oceanographer of the Navy and the Navy M&S Technical Support Group to collaborate on the development of an information model, data format, data dictionary, algorithms, techniques, and database management system that can define and mediate the environmental data required to enable a virtual prototype. A standard for simulation environments is critical to enabling Simulation Based Acquisition (SBA).
  - (U) (\$2,822) Products and Services: Continue development of common services, tools, and data bases. Provide the necessary planning and coordination of M&S efforts across the navy M&S Functional Areas, other Services, OSD, Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within Navy and DoD. Manage and maintain the Navy Modeling and Simulation Information System (NMSIS), as a central M&S information resource to reduce stovepiped development, promote standardization and reuse and support informed M&S investment decision making across Navy. Develop standards for modeling communication networks and information systems with the overarching objective of facilitating the development of a core, reusable, communications M&S capability which supports the full range of architecture and engineering design and analysis requirements across Navy.

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (X2222)  
(Exhibit R-2a, page 14 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEBRUARY 1999

PROJECT NUMBER: X2222

PROJECT TITLE: Naval Modeling & Simulation

- (U) (\$800) M&S Quality Assurance Program: Implement and manage the Naval M&S Verification, Validation, and Accreditation (VV&A) process and guidelines for modeling and simulation and the Verification, Validation, and Certification (VV&C) process and guidelines for data. Maintain and operate the Naval M&S VV&A/VV&C repository. Establish and implement a VV&A/VV&C training curriculum for developers and accredits. Provide annual VV&A/VV&C assessment to the CNO.
- (U) (\$3,273) Simulation Experiments: Support Fleet Exercise simulation experiments and the application of distributed simulation to a wide variety of operational, research and development, training, test and evaluation exercises. Develop a series of simulation projects to test and evolve the standards for models, interfaces, data, and tools necessary to enable the seamless access and use of operationally relevant M&S to support the range of Navy training, warfare assessments and acquisition requirements.

3. (U) FY 2000 PLAN: N/A See PE 0308601N

B. (U) PROGRAM CHANGE SUMMARY: FY 1998 Funds were reduced -\$75K for the SBIR Assessment. In FY2000 and later, a technical change moves this Project to Program Element 0308601N in order to more accurately portray the Naval Modeling and Simulation Project.

C. (U) OTHER PROGRAM FUNDING SUMMARY:

FY1998	FY1999	FY2000
O&M,N PE0204662N/1C1C (Partial)		
0	774	See PE 0308601N

(U) RELATED RDT&E: Not applicable.

(U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (X2222)  
(Exhibit R-2a, page 15 of 17)

UNCLASSIFIED

# UNCLASSIFIED

## FY 2000 President's Budget Estimate

EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605853N**      **DATE: February 1999**  
**PROGRAM ELEMENT TITLE: Management, Technical & International Support**      **PROJECT NUMBER: W2347**  
**PROJECT TITLE: Test & Evaluation Modeling & Simulation**

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
W2347 Test and Evaluation Modeling and Simulation	0	0	2,199	2,240	2,549	2,744	2,780	2,895	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project enhances the Test and Evaluation (T&E) efforts of the Navy by providing policy, coordination, and technical support for the Modeling and Simulation (M&S) program. The mission is to promote and standardize modeling and simulation for interoperability and re-use within and between programs and across the Research Development Test and Evaluation community. This also provides funds to incrementally establish the Joint Synthetic Test and Evaluation Battlespace (JSTEB) Joint Operational Requirements document. Test and Evaluation Modeling and Simulation (TEMS) is required to reduce the cost, schedule, and risk of acquisition programs by supporting the early integration of M&S capabilities into the T&E process.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: Budget Activity 6: This program is funded under Research, Development Test and Evaluation management support because it supports the operations and installations required for general research and development.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (u) FY 1998 ACCOMPLISHMENTS: N/A New Start in FY 2000
2. (U) FY 1999 PLAN: N/A
3. (U) FY 2000 PLAN:
  - (U) (\$2,199) Demonstrate the re-use, interoperability and cost benefit of integrated M&S in T&E through pilot programs. Complete the acquisition and T&E road map for the JSTEB. Continue defining test capabilities and methods to reduce Limitations to Test Scope referred to in TEMPs using M&S. Continue to support Navy M&S policy, coordination, and technical support. Continue

R-1 Line Item 139

Exhibit R-2a, RDT&E Budget Item Justification (W2347)  
 (Exhibit R-2a, page 16 of 17)

UNCLASSIFIED

**UNCLASSIFIED**  
**FY 2000 President's Budget Estimate**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605853N**

**PROGRAM ELEMENT TITLE: Management, Technical & International Support**

**DATE: February 1999**

**PROJECT NUMBER: W2347**

**PROJECT TITLE: Test & Evaluation  
Modeling &  
Simulation**

to update the Navy TEMS Master Plan and the Program Management Plan. Continue to coordinate and leverage Army, Air Force, Joint, and OSD T&E M&S initiatives. Continue to maintain the Navy T&E Repository for M&S. Continue to provide technical support to the Navy acquisition community using T&E modeling and simulation resources.

B. (U) PROGRAM CHANGE SUMMARY: Funding for FY1999 was eliminated as the result of a Congressional reduction to management, infrastructure and support. FY 2000 reflects an increase of \$500 thousand for T&E Modeling and Simulation and \$295 thousand for programmatic adjustments. This increase is partially offset by a decrease of \$59 thousand for pricing adjustments.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable

**RELATED RDT&E**

(U) P.E. 0604759N: Major T&E Investment

(U) P.E. 0605864N: Test and Evaluation Support

D. (U) SCHEDULE PROFILE: Not Applicable

**R-1 Line Item 139**

**Exhibit R-2a, RDT&E Budget Item Justification (W2347)**  
**(Exhibit R-2a, page 17 of 17)**

**UNCLASSIFIED**

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N  
PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ESTIMATE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL PROGRAM
R0135 ONR Science and Technology Management 50,824 50,813 48,098 49,362					50,573	51,922	52,944	55,561	CONT.	CONT.
R0137 ONR S&T Instrumentation Modernization 1,201 1,220 1,225 1,257					1,280	1,298	1,313	1,366	CONT.	CONT.
R2353 DFAS Billings 0* 7,835 3,454 6,962					6,533	6,155	6,229	6,477	CONT	CONT
TOTAL	52,025	59,868	52,777	57,581	58,386	59,375	60,486	63,404	CONT.	CONT.

\*Budgeted/Appropriated in O&M,N in FY98.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element covers Office of Naval Research (ONR) expenses including salaries, utilities, printing, supplies, materials, information technology (IT), general support equipment and other day-to-day costs. The vast majority of these items represent fixed costs associated with scientists and engineers supporting the Navy's Science and Technology Program. The Defense Finance and Accounting Service (DFAS) Billing project provides funds for accounting services provided to Research and Development (R&D) activities.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

(U) PROGRAM CHANGE FOR TOTAL P.E.:

FY 1998 FY 1999 FY 2000  
R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 1 of 8)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET      DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

(U) FY 1999 President's Budget:	50,206	60,006	59,808
(U) Appropriated Value:		60,006	
(U) Adjustment from FY 1999 PRESBUDG:	+1,819	- 138	-7,031
(U) FY 2000/2001 President's Budget Submission:	52,025	59,868	52,777

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 P.E. increase reflects FY 1998 Actual Update adjustments (+1,847) and FY98 SBIR Reduction (-28). FY 1999 P.E. decrease reflects Economic Assumption adjustments (-138). FY 2000 P.E. decrease reflects internal Navy program adjustments (-576); GSA Rent Payment Consolidation adjustment (-3,314); Civilian pay adjustments (+859) and DFAS Financial Ops adjustment (-4,000).

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 2 of 8)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

(U) (COST): (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ESTIMATE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0135 ONR Science and Technology Management	50,824	50,813	48,098	49,362	50,573	51,922	52,944	55,561	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports Office of Naval Research (ONR) leadership, management and direction for the Navy's Science and Technology program. This project funds salaries, utilities, supplies, and other fixed costs at ONR Headquarters and field offices. ONR sponsors scientific advances which lead to future Naval capabilities, supporting the fleet's ability to operate from a position of technological superiority. Functions performed include (1) scientific and technical direction of the nationwide Category 6.1 basic research program with colleges, universities, non-profits and Navy laboratories and warfare centers; (2) scientific and technical direction of the 6.2 applied research program through the Navy's R&D laboratories and warfare centers and industry; (3) scientific and technical direction of the Navy advanced technology development program (Category 6.3) through the Navy's R&D laboratories, warfare centers and industry; (4) management, resource formulation, program assessment, and contract negotiation/administration of the Navy basic research, applied research and advanced technology development program; (5) program management and support to selected research programs of Ballistic Missile Defense Organization (BMDO) and Defense Advanced Research Projects Agency (DARPA); and (6) coordination of the Navy's Technology Base program within the context of total DoD/Government (e.g., National Science Foundation, National Academy of Sciences) R&D initiatives in order to maximize scientific advances. This project also supports ONR management and direction for the following Navy-wide programs: Small Business Innovation Research (SBIR), Naval Research Advisory Committee, Navy Patent Program, Navy Historically Black Colleges and Universities Program, Navy Manufacturing Technology Program and the SSBN Survivability Program. In addition, this program supports ONR's Navy-wide responsibilities in the negotiation and establishment of indirect cost rates for DoD-assigned universities and performance of contract administration for all DoD contacts/grants at all colleges and universities

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 1998 ACCOMPLISHMENTS:

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 3 of 8)

# UNCLASSIFIED



# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science & Technology  
Management

PROJECT NUMBER: R0135

PROJECT TITLE: ONR Science & Technology  
Management

- (U) (\$50,824) The project provided for basic costs of the ONR headquarters and its field activities in support of the entire Navy Science and Technology program. Almost all the funds in this project are fixed costs, such as salaries, rent, communications, etc. The project provided support for the ONR headquarters and field offices. Specifically, it paid the salaries of scientific and engineering personnel who direct the execution of the Navy's basic research (Category 6.1), applied research (Category 6.2), and advanced technology development (Category 6.3) programs at the nation's universities/colleges, Navy laboratories and warfare centers, and private industry. In addition to its Navy Science and Technology mission, ONR provided important management and administrative support to BMDO and DARPA.

2. (U) FY 1999 PLAN:

- (U) (\$50,813) The project continued to provide for basic costs of the ONR headquarters and its field activities in support of the entire Navy Science and Technology program. Almost all the funds in this project are fixed costs, such as salaries, rent, communications, etc. The project continued to provide support for the ONR headquarters and field offices. Specifically, it paid the salaries of scientific and engineering personnel who direct the execution of the Navy's basic research (Category 6.1), applied research (Category 6.2), and advanced technology development (Category 6.3) programs at the nation's universities/colleges, Navy laboratories and warfare centers, and private industry. In addition to its Navy Science and Technology mission, ONR provided important management and administrative support to BMDO and DARPA.

3. (U) FY 2000 PLAN:

- (U) (\$48,098) The project continues to provide for basic costs of the ONR headquarters and its field activities in support of the entire Navy Science and Technology program. Almost all the funds in this project are fixed costs, such as salaries, communications, etc. The project continues to provide support for the ONR headquarters and field offices. Specifically, it pays the salaries of scientific and engineering personnel who direct the execution of the Navy's basic research (Category 6.1), applied research (Category 6.2), and advanced technology development (Category 6.3) programs at the nation's universities/colleges, Navy laboratories and warfare centers, and private industry. In addition to its Navy Science and Technology mission, ONR provides important management and administrative support to BMDO and DARPA.

B. (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 4 of 8)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605861N      PROJECT NUMBER: R0135  
PROGRAM ELEMENT TITLE: RDT&E,N Science & Technology Management      PROJECT TITLE: ONR Science & Technology Management

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

(U) Related RDT&E: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 5 of 8)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science & Technology Management

(U) COST: (Dollars in Thousands)

PROJECT

PROJECT NUMBER & TITLE	FY 1998 ESTIMATE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 20001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0137 ONR S&T Instrumentation Modernization	1,201	1,220	1,225	1,257	1,280	1,298	1,313	1,366	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project purchases information technology (IT) and general support equipment for the Office of Naval Research (ONR) headquarters and field offices.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:
  - (U) (\$1,201) Purchased IT and general support equipment for ONR headquarters and field offices.
2. (U) FY 1999 PLAN:
  - (U) (\$1,189) Purchase IT and general support equipment for ONR headquarters and field offices.
  - (U) (\$31) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.
3. (U) FY 2000 PLAN:
  - (U) (\$1,225) Purchase IT and general support equipment for ONR headquarters and field offices.
- B. (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- (U) Related RDT&E: Not applicable.
- D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 6 of 8)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N  
PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

(U) COST: (Dollars in Thousands)									
PROJECT NUMBER & TITLE	FY 1998 ESTIMATE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TOTAL PROGRAM
R2353	DFAS Billings								
	0*	7,835	3,454	6,962	6,533	6,155	6,229	6,477	CONT.
									CONT.

\*Budgeted/appropriated in O&M,N in FY98.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funding for accounting services provided to Research and Development (R&D) activities by the Defense Finance and Accounting Service (DFAS).

## (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS: Not applicable.
2. (U) FY 1999 PLAN:
  - (U) (\$7,835) Funded DFAS bill for transactions processed in support of Department of the Navy R&D activities. Specific services included pay, transportation, commercial invoices, travel, and the maintenance of trial balances.
3. (U) FY 2000 PLAN:
  - (U) (\$3,454) Funds DFAS bill for transactions processed in support of Department of the Navy R&D activities. Specific services include pay, transportation, commercial invoices, travel, and the maintenance of trial balances.
- B. (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- C. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable.
- (U) Related RDT&E: Not applicable.
- D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 7 of 8)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET      DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605861N      PROJECT NUMBER: R2353  
PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology      PROJECT TITLE: DFAS Billings  
Management

**This Page Intentionally Left Blank**

R-1 Line Item 141

Budget Item Justification  
(Exhibit R-2, page 8 of 8)

# UNCLASSIFIED

## UNCLASSIFIED

FY 2000 / 2001 RDT&amp;E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N

PROJECT NUMBER: M0104

PROGRAM ELEMENT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation ModernizationPROJECT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation Modernization

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ESTIMATE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0104 RDT&E Medical Science and Technology Management and Instrumentation Modernization	10,219	8,483	9,258	10,487	11,116	12,308	12,712	13,114		

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element includes RDT&E funds for operating and miscellaneous support costs at RDT&E laboratories and other installations, facility and civilian personnel costs not directly chargeable to RDT&E projects. Also includes RDT&E funds for RDT&E laboratories and facilities for research, support, equipment, minor construction and other investment and materiel support costs not directly chargeable to RDT&E projects. Excludes military manpower and related costs, non-RDT&E base operating costs, and military construction costs which are included in other appropriate programs.

## (U) PROGRAM ACCOMPLISHMENT AND PLANS:

## 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$7,830) Provided operating and miscellaneous support costs at NMRDC and its research laboratories.
- (U) (\$1,057) Provided procurement of technologically advanced research equipment and replacement of obsolete sterilizer, tunnel cage washer, cell culture CO2 incubator system, computer upgrades, diode pump solid state frequency doubled laser, and protein sequencer analysis system.
- (U) (\$1,332) Provided replacement of incinerator, HVAC system, underground storage tanks, and boiler and pumps. Provided funding for fire protection system, upgrading information and telecommunication system, and design for life safety code system installation and repairs. Funded renovation of micro and immunology laboratories, architectural engineering design of storage facility, and renovation of Bldg. 328 for utilization by human performance department.

R-1 Line Item 142

Exhibit R-2, Budget Item Justification  
(Exhibit R-2, Page 1 of 5)

UNCLASSIFIED

UNCLASSIFIED

FY 2000 / 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6	PROGRAM ELEMENT: 0605862N	PROJECT NUMBER: M0104
PROGRAM ELEMENT TITLE:	RDT&E Medical Science and Technology Management and Instrumentation Modernization	PROJECT TITLE: RDT&E Medical Science and Technology Management and Instrumentation Modernization

This Page Intentionally Left Blank

R-1 Line Item 142

Exhibit R-2, Budget Item Justification  
(Exhibit R-2, Page 2 of 5)

UNCLASSIFIED

# UNCLASSIFIED

FY 2000 / 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N

PROJECT NUMBER: M0104

PROGRAM ELEMENT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation Modernization

PROJECT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation Modernization

2. (U) FY 1999 PLAN:

- (U) (\$8,483) Continue to provide operating and miscellaneous support costs at BUMED and its research laboratories.

3. (U) FY 2000 PLAN:

- (U) (\$9,258) Continue to provide operating and miscellaneous support costs at BUMED and its research laboratories. Continue to provide support for technologically advanced cutting edge research equipment for research and data acquisition, automated sampling and real time statistical analysis of biomedical research data utilizing data information systems integral with new equipment. Continue to provide replacement of obsolescent research equipment. Continue to provide support to physical facility areas needing major repair, minor construction, rehabilitation to meet mission requirements as well as meeting environmental compliance and pollution standards.

4. (U) FY 2001 PLAN:

- (U) (\$10,487) Continue to provide operating and miscellaneous support costs at BUMED and its research laboratories. Continue to provide support for technologically advanced equipment for research and data acquisition, automated sampling and real time statistical analysis of biomedical research data utilizing data information systems integral with new equipment. Continue to provide replacement of obsolescent research equipment. Continue to provide support to physical facility areas needing major repairs, replacement, minor construction, rehabilitation to meet mission requirements and environmental compliance and pollution standards.

R-1 Line Item 142

UNCLASSIFIED



## UNCLASSIFIED

## FY 2000 / 2001 RDT&amp;E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N

PROJECT NUMBER: M0104

PROGRAM ELEMENT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation ModernizationPROJECT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation Modernization

## B. (U) PROGRAM CHANGE SUMMARY:

	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
(U) President's Budget:	0	0	0	0	0	0	0	0
(U) Adjustments from FY 1999 PRESBUDG:	10,219	8,483	9,258	10,487	11,116	12,308	12,712	13,114
(U) FY 2000 / 2001 President's Submission	10,219	8,483	9,258	10,487	11,116	12,308	12,712	13,114

## (U) CHANGE SUMMARY EXPLANATION:

## (U) Funding:

(U) FY 1998: increase of (9,879) for ONR Comparability Adjustment; increase of (340) for FY 1998 update.

(U) FY 1999: increase of (8,483) for ONR Comparability Adjustment.

(U) FY 2000: increase of (7,264) for Realign Program Elements for S&amp;T; increase of (1,852) for R&amp;D Transfer from N091 to N093; decrease of (-70) for Center of Excellence; decrease of (-92) for POL Rates; increase of (304) for Civilian Pay Rates; increase of (775) for Program Realignment for Actual Cost.

(U) FY 2001: increase of (7,595) for Realign Program Elements for S&amp;T; increase of (2,613) for R&amp;D Transfer from N091 to N093; decrease of (-60) for Center of Excellence; decrease of (-40) for POL Rates; increase of (379) for Civilian Pay Rates; increase of (1,229) for Program Realignment for Actual Cost.

(U) FY 2002: increase of (7,901) for Realign Program Elements for S&amp;T; increase of (2,830) for R&amp;D Transfer from N091 to N093; decrease of (-46) for Center of Excellence; decrease of (-40) for POL Rates; increase of (471) for Civilian Pay Rates; increase of (629) for Program Realignment for Actual Cost.

(U) FY 2003: increase of (8,909) for Realign Program Elements for S&amp;T; increase of (2,890) for R&amp;D Transfer from N091 to N093; decrease of (-36) for Center of Excellence; decrease of (-40) for POL Rates; increase of (585) for Civilian Pay Rates; increase of (1,192) for Program Realignment for Actual Cost.

R-1 Line Item 142

Exhibit R-2, Budget Item Justification  
(Exhibit R-2, Page 4 of 5)

UNCLASSIFIED

UNCLASSIFIED

FY 2000 / 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N

PROGRAM ELEMENT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation Modernization

PROJECT NUMBER: M0104

PROJECT TITLE: RDT&E Medical Science and  
Technology Management and  
Instrumentation Modernization

(U) FY 2004: increase of (9,106) for Realign Program Elements for S&T; increase of (2,954) for R&D Transfer from N091 to N093; decrease of (-36) for Center of Excellence; decrease of (-40) for POL Rates; increase of (728) for Civilian Pay Rates; increase of (404) for Program Realignment for Actual Cost.

(U) FY 2005: increase of (9,307) for Realign Program Elements for S&T; increase of (3,020) for R&D Transfer from N091 to N093; decrease of (-36) for Center of Excellence; decrease of (-83) for POL Rates; increase of (906) for Civilian Pay Rates; increase of (402) for Program Realignment for Actual Cost.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0605861N, RDT&E, N Science and Technology Management and Navy Medical Research and Development Programs. Beginning in FY 2000, realign PE 0605861N for S & T.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 142

Exhibit R-2, Budget Item Justification  
(Exhibit R-2, Page 5 of 5)

UNCLASSIFIED

**UNCLASSIFIED**  
**EXHIBIT R-2, FY 2000 RDT&EN BUDGET ITEM JUSTIFICATION SHEETS**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605863N**  
**PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support**

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
S0354 RDT&E Ships Support	13,080	12,207	15,960	15,804	13,253	13,549	13,733	14,318	CONT.	CONT.
W0568 RDT&E Aircraft Flight Hours	24,134	27,178	28,522	28,940	30,605	30,829	31,069	32,559	CONT.	CONT.
W0569 RDT&E Aircraft Support	24,964	32,346	28,681	28,096	28,219	29,560	34,137	35,334	CONT.	CONT.
<b>TOTAL</b>	<b>62,178</b>	<b>71,731</b>	<b>73,163</b>	<b>72,840</b>	<b>72,077</b>	<b>73,938</b>	<b>78,939</b>	<b>82,211</b>	<b>CONT.</b>	<b>CONT.</b>

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This continuing program provides support for ships and platforms required to accommodate Research, Development, Test and Evaluation (RDT&E) of new systems. The RDT&E ship and aircraft inventory is required to adequately test new and improved weapon systems, stay current with threats, and increase warfighting capability of the fleet. The program provides integrated logistics support for aircraft at selected field activities; provides depot-level rework of aircraft, engines, and components for the Navy inventory of RDT&E aircraft; and provides support for ships and aircraft bailed to contractors for Navy RDT&E projects. Costs covered under this element include aircrew training and proficiency, fuel, supplies, equipment, modification, repair, Aviation Depot Level Repairables, Special Flight Test Instrumentation Pool equipment, overhaul of ships and aircraft, as well as organizational, intermediate, and depot maintenance of ships and aircraft in the Navy RDT&E inventory.

**R-1 Line Item 143**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROGRAM ELEMENT TITLE: RDT&E Ship & Aircraft Support

PROJECT NUMBER: S0354

PROJECT TITLE: RDT&E Ship Support

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>Budget</u>	<u>FY 1999</u>	<u>Budget</u>	<u>FY 2000</u>	<u>Estimate</u>	<u>FY 2001</u>	<u>Estimate</u>	<u>FY 2002</u>	<u>Estimate</u>	<u>FY 2003</u>	<u>Estimate</u>	<u>FY 2004</u>	<u>Estimate</u>	<u>FY 2005</u>	<u>Estimate</u>	<u>To</u>	<u>Total</u>
																	<u>Complete</u>	<u>Program</u>
RDT&E Ship Support																		
<b>TOTAL</b>	13,080		12,207		15,960		15,804		13,253		13,549		13,733		14,318		CONT.	CONT.

Quantity of RDT&E Articles

### (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) S0354, RDT&E Ships Support. This project provides for operation and maintenance of platforms used as Sea Based Test Sites in support of the Navy Research, Development, Test, and Evaluation (RDT&E) program. These are the USS DOLPHIN (AGSS-555) and the Self-Defense Test Ship (SDTS). Testing aboard these platforms reduces the number of fleet units required to support RDT&E efforts. In the case of the SDTS, it provides the capability of testing self-defense weapons systems to within their minimum ranges. A major cost of this project is regularly scheduled ship maintenance. The remainder of the funds are used for purchase of supplies and equipment, fuel and petroleum products, repairs, and supporting modifications. Most costs are fixed and are associated with simply having these platforms in the inventory. A lesser portion of the costs varies with the tempo and type of ship operations and provides for systems improvements and replacement planning. The nature of the operation is determined by the overall Navy/DoD R&D testing program.

(U) USS DOLPHIN will support software upgrades testing of the MK 50 and MK 48 ADCAP torpedoes, the NSSN Material Qualification Program, ONR Littoral Warfare Advanced Development (LWAD) Program, Improved Extended Echo Ranging (IEER), Advanced Extended Echo Ranging (AEER), Advanced Deployable System (ADS), Submarine Mast Detection Radar (SMDR). Laser Airborne System - Hyperspectral (LASH), Airborne Low Frequency Sonar (ALFS), Tripartied Technology Cooperation Program (TTCP) and the Advanced Sea/Air/Land (SEAL) Delivery Program. Mobile Inshore Warfare Unit Arrays and the Sea-based Weapons and Tactics School (SWATS) are also frequently supported by USS DOLPHIN. USS DOLPHIN provides support for numerous undersea surveillance, sonar, weapons, communications and imaging programs.

(U) The current and projected Anti-Ship Cruise Missile (ASCM) threats require self-defense weapons systems capable of adequately countering ASCMs into the year 2000 and beyond. The National Defense Authorizations Act for FY87, section 910, "Testing of Certain Weapons Systems and Munitions," requires live-fire lethality testing of manned weapons systems. Operational and safety constraints limit realistic live-fire lethality testing with U.S. Navy ships and thus drive the requirement for having an afloat, unmanned, remotely controlled SDTS. SDTS plans call for testing PHALANX, High Frequency Surface Wave Radar Advanced Technology Demonstration (ATD), the Rolling Airframe Missile (RAM) and future short range Anti-Air Warfare systems against realistic threat presentation in an at-sea environment.

R-1 Line Item 143

UNCLASSIFIED

## UNCLASSIFIED

### EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER: S0354

PROGRAM ELEMENT TITLE: RDT&E Ship & Aircraft Support

PROJECT TITLE: RDT&E Ship Support

#### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

##### 1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$10,813) USS DOLPHIN conducted Submarine Mast Detection Radar (SMDR), Laser Airborne System – Hyperspectral (LASH), Improved Extended Echo Ranging (IEER), SUBLINK'98 task (Telesonar) and other program at sea testing. Additionally, USS DOLPHIN supported joint testing of ONR, SPAWAR and DARPA undersea surveillance programs in the Santa Barbara Channel Experiment. This included testing of the system Advanced Deployable System (ADS). The evaluation of high alloy fasteners for the NSSN program continued. ASDS crew training and system evaluation missions were conducted. USS DOLPHIN will continue to support near ocean bottom operations, torpedo exercises, fleet exercises and RDT&E programs modeling sonar propagation, testing sensors and communication systems. USS DOLPHIN conducts periodic phased maintenance to maintain certification and material condition and procures material to support continued operations. Restricted Availability (RAV 2-5) begins in fourth quarter FY 1998.

- (U) (\$2,267) Ex-DECATUR/SDTS conducted live fire operations at NAVAIRWARCENWPNDIV Point Mugu, CA. Live fire testing supported includes the PHALANX DT&E, RAM OT&E, and SSDS OT&E. NAVSURFWARCENDIV Port Hueneme, CA, plans, schedules, and performs combat systems operations and maintenance onboard SDTS.

##### 2. FY 1999 PLAN:

- (U) (\$10,097) USS DOLPHIN complete RAV 2-5 in first quarter FY 1999. USS DOLPHIN ONR Littoral Warfare Advanced Development (LWAD) Program, Improved Extended Echo Ranging (IEER), Advanced Extended Echo Ranging (AEER), Airborne Low Frequency Sonar (ALFS), and Tripartied Technology Cooperation Program (TTCP) at sea testing. USS DOLPHIN will extensively support the DT&E and OT&E events for the ADS and supports ONR weapons development in Broadband Torpedo. USS DOLPHIN will continue to support near ocean bottom operations, torpedo exercises, fleet exercises and RDT&E programs modeling sonar propagation, testing sensors and communication systems. USS DOLPHIN conducts periodic phased maintenance to maintain certification and procures material to support continued operations.
- (U) (\$2,067) Ex-DECATUR/SDTS conducts live fire operations at NAVAIRWARCENWPNDIV Point Mugu, CA. Live fire testing planned includes the ESSM DT&E and OT&E RAM OT&E and High Frequency Surface Wave Radar ATD. NAVSURFWARCENDIV Port Hueneme, CA, plans, schedules, and performs combat systems operations and maintenance onboard SDTS.
- (U) (\$43) Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC638.

R-1 Line Item 143  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY:** 6

**PROGRAM ELEMENT:** 0605863N

**PROJECT NUMBER:** S0354

**PROGRAM ELEMENT TITLE:** RDT&E Ship & Aircraft Support

**PROJECT TITLE:** RDT&E Ship Support

**3. FY 2000 PLAN:**

- (U) (\$13,800) USS DOLPHIN plans on supporting DT&E and OT&E testing of the LWAD, IEER, AEER, ALFS, and ADS programs. In addition, DOLPHIN may support the Long Range Mine Reconnaissance System (LMRS) concept development efforts and ASDS system upgrades. USS DOLPHIN will continue to support near ocean bottom operations, torpedo exercises, fleet exercises and RDT&E programs modeling sonar propagation, testing sensors and communication systems. In addition, USS DOLPHIN conducts periodic phased maintenance to maintain certification and procures material to support continued operations. RAV 3-5 begins in fourth quarter FY 2000.
- (U) (\$2,160) Ex-DECATUR/STDS conducts live fire operations at NAVAIRWARCENWPNDIV Point Mugu, CA. Planned live fire testing includes the RAM Helo Anti-Surface mode, and the ESSM. NAVSURFWARCENDIV Port Hueneme CA plans, schedules, and performs combat systems operations and maintenance on board Self Defense Test Ship (SDTS).

**R-1 Line Item 143**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

PROJECT NUMBER: S0354  
PROJECT TITLE: RDT&E Ship Support

PROGRAM ELEMENT: 0605863N  
PROGRAM ELEMENT TITLE: RD&TE Ship & Aircraft Support

BUDGET ACTIVITY: 6

### (U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	13,226	12,705	15,676
(U) Appropriated Value:	13,226		
(U) Adjustments from Pres Budget	-146	-498	+284
(U) FY2000 President's Budget Submit:	13,080	12,207	15,960

### CHANGE SUMMARY EXPLANATION:

(U) Funding: FY1998 decreases consist of \$112 thousand for a Small Business Innovative (SBIR) assessment and a decrease of \$34 thousand for minor programmatic adjustments. FY 1999 decrease of \$498 thousand consists of a decrease of \$440 thousand for programmatic adjustment, a decrease of \$28 thousand for Revised Economic Assumption and a decrease of \$30 thousand for Civilian Personnel Underexecution. FY 2000 increase of \$284 thousand due to balancing adjustments - decrease of \$151 thousand for Acquisition Center of Excellence, decrease of \$27 thousand for Outsourcing Adjustments, increase of \$611 for NWCF rate adjustments, decrease of \$27 thousand for Diesel Fuel, increase of \$109 thousand for Civilian Pay Rates and decrease of \$231 thousand for Non Pay Inflation.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

R-1 Line Item 143  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605863N      PROJECT NUMBER: W0568  
 PROGRAM ELEMENT TITLE: RDT&E Ship and Aircraft Support      PROJECT TITLE: RDT&E Aircraft Flight Hours

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W0568 RDT&E Aircraft Flight Hours	24,134	27,178	28,522	28,940	30,605	30,829	31,069	32,559	CONT.	CONT.
<b>TOTAL</b>										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: RDT&E Aircraft Flight Hours. This non-acquisition project supports direct flight hour costs, including organizational and intermediate level maintenance, as well as associated consumables, including petroleum, oil, and lubricants (POL). These flight hours are used for post-maintenance test flights, aircrew training, and the accomplishment of pilot proficiency requirements (approximately 3 hours per pilot per month), in support of Research and Development programs at four Naval Air Systems Command/Naval Surface Warfare Center/Office of Naval Research (NAVAIR/NSWC/ONR) flight activities. Annual flight simulator training for Naval Air Warfare Center (NAWC) activities, as well as pilot/Naval Flight Officer (NFO) Standardization and Instrument check flights for Navy personnel assigned to Defense Logistics Agency (DLA) activities are also supported.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

### 1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$ 24,134) Met 93 percent of post-maintenance test flights, aircrew training, and proficiency flight hour requirements. Provided organizational and intermediate-level maintenance, supply, and POL in support of RDT&E aircraft operations. Supported pilot/NFO check flights for DLA activities.

R-1 Line Item 143  
 UNCLASSIFIED



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT:** 0605863N

**PROJECT NUMBER:** W0568

**PROGRAM ELEMENT TITLE:** RDT&E,N Ship and Aircraft Support

**PROJECT TITLE:** RDT&E Aircraft Flight Hours

**2. FY 1999 PLAN:**

- (U) (\$ 27,178) Meet 93 percent of post-maintenance test flights, aircrew training, and proficiency flight hour requirements. Provide organizational and intermediate-level maintenance, supply, and POL in support of RDT&E aircraft operations. Support pilot/NFO training and check flights for DLA activities.

**3. FY 2000 PLAN:**

- (U) (\$ 28,522) Meet post-maintenance test flight, aircrew training, and proficiency flight hour requirements. Provide organizational and intermediate-level maintenance, supply, and POL in support of RDT&E aircraft operations. Support pilot/NFO check flights for DLA activities.

**R-1 Line Item 143  
UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605863N      PROJECT NUMBER: W0568  
 PROGRAM ELEMENT TITLE: RDT&E, N Ship and Aircraft Support      PROJECT TITLE: RDT&E Aircraft Flight Hours

### (U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	8,464	10,844	11,085
(U) Appropriated Value:	8,336	10,844	
(U) Adjustments from Pres Budget: -	+15,670	+16,334	+17,437
(U) FY2000 President's Budget Submit:	24,134	27,178	28,522

### CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 increase consists of \$15,798 for comparability adjustment from program element 0605864N to fund Pilot Proficiency Flying cost. This increase is partially offset by decreases of \$113 thousand for minor program adjustments and \$15 thousand for the Small Business Innovation Research (SBIR) assessment. FY 1999 increase consists of \$16,817 thousand for comparability adjustment from program element 0605864N to fund Pilot Proficiency Flying cost. This increase is partially offset by a decrease of \$483 thousand for Congressional undistributed reductions. FY 2000 increase consists of \$16,800 thousand realignment from program element 0605864N to fund Pilot Proficiency Flying cost and \$1,400 thousand for realignment of funds from program element 0604759N to fund R&D Project Flying cost. These increases are offset by decreases of \$482 thousand for pricing adjustments and \$281 thousand for other Navy priorities.

(U) Schedule: Not applicable.

(U) Technical: Not applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

### Related RDT&E

(U) P.E. 0605864, Test and Evaluation Support

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

R-1 Line Item 143  
 UNCLASSIFIED

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER: W0568

PROJECT TITLE: RDT&E Aircraft Flight Hours

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Date</u>	<u>Cost</u>	<u>Date</u>			
Flight Hours	WX	NTWL								
		NAWCAD PAX	45,201	12,798	1 Oct 98	16,498	1 Oct 99	CONT.	CONT.	
		River MD								
		NTWP								
DLA Flight Hours	WR	NAWCWD	31,338	10,080	1 Oct 98	9,040	1 Oct 99	CONT.	CONT.	
		Pt Mugu								
		NSWC								
		Panama City FL	10,051	937	1 Oct 98	417	1 Oct 99	CONT.	CONT.	
MISC	WX, WR	NRL NAWCAD	16,061	3,239	1 Oct 98	2,434	1 Oct 99	CONT.	CONT.	
		Pax River MD								
		Norfolk VA	297	124	1 Oct 98	133	1 Oct 99	CONT.	CONT.	
		San Diego CA								
Subtotal Project Development		Corpus Christi TX								
		Various	6,338	0		0		CONT.	CONT.	
			109,286	27,178		28,522		CONT.	CONT.	
Remarks:	This on going program has existed since prior to FY 1975. Detailed execution data for total prior years costs is not available prior to FY 1990									
Subtotal Support			0	0		0			0	0
Remarks:										

R-1 Line Item 143  
UNCLASSIFIED

# UNCLASSIFIED

DATE: February 1999

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 065863N

PROJECT NUMBER:: W0568

PROJECT TITLE: RDT&E Aircraft Flight Hours

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Cost to Complete	Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date			

Cost Categories:

Subtotal Test & Evaluation

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

Remarks:

Subtotal Management

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

Remarks:

Total Cost

109,286	27,178	28,522	CONT.	CONT.
---------	--------	--------	-------	-------

R-1 Line Item 143  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605863N**      **PROJECT NUMBER: W0569**  
**PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support**      **PROJECT TITLE: Aircraft Support**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
<b>W0569 RDT&amp;E Aircraft Support</b>										
<b>TOTAL</b>	<b>24,964</b>	<b>32,346</b>	<b>28,681</b>	<b>28,096</b>	<b>28,219</b>	<b>29,560</b>	<b>34,137</b>	<b>35,334</b>	<b>CONT.</b>	<b>CONT.</b>

Quantity of RDT&E Articles

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** RDT&E Aircraft Support. This continuing project funds costs associated with Navy Research, Development, Test and Evaluation (RDT&E) fixed and rotary wing aircraft which accommodate test and evaluation of aircraft/weapon systems. Testing aboard these platforms reduces the number of fleet units required to support RDT&E efforts. Included in these costs are Aviation Depot-Level Repairables (AVDLRs), which are spare and replacement aircraft parts and components. In FY 1998, AVDLR costs were reclassified as direct (customer-funded) costs, and a portion of the AVDLR funding to support customer programs were redistributed to customers. The remainder of AVDLR funding was retained in the account to support overhead maintenance related flight operations, aircrew training, and proficiency flight hours. This project also funds airframe Standard Depot Level Maintenance (SDLM), in-service repairs, modifications, emergency repairs, and engine repair, as well as aircraft material condition and field inspections. Additionally, it funds Individual Material Readiness List (IMRL) tools and support equipment, modification of in-service aircraft, and other systems for application to and compatibility with RDT&E requirements. Special Flight Test Instrumentation Pool (SFTIP) equipment, shared by programs to reduce or eliminate procurement lead times and save money, is also supported.

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- **(U) (\$ 24,964)** The following programs were supported at a level which met approximately 80% of forecasted requirements: SDLM, AVDLR, IMRL, engine, and in-service repair support and modifications of aircraft in the RDT&E inventory. Required engine repairs deferred to FY98 were accomplished, with some deferrals of FY98 work to FY99. Consistent with an OSD policy change, customers funded AVDLR costs associated with project flight hours. Operation and implementation of maintenance and material management programs at Naval Air Warfare Center activities continued.

**R-1 Line Item 143**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: February 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605863N**

**PROJECT NUMBER: W0569**

**PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support**

**PROJECT TITLE: RDT&E Aircraft Support**

**2. FY 1999 PLAN:**

- (U) (\$ 32,323) The following programs will be fully funded as they are currently planned, but could face shortfalls as the Navy continues to develop the transition from Aircraft Service Period Adjustment (ASPA)/SDLM to the Planned Depot Maintenance (PDM) program: SDLM, IMRL, engine, and in-service repairs support and modifications of aircraft in the RDT&E inventory. Required Depot-Level maintenance deferred to FY99 will be accomplished. AVDLR support is provided for overhead flight hours, with RDT&E projects funding those AVDLR costs associated with project flight hours. Operation and implementation of maintenance and material management programs at Naval Air Warfare Center activities will continue.
- (U) (\$ 23) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

**3. FY 2000 PLAN:**

- (U) (\$ 28,681) Continue the transition from ASPA/SDLM to the PDM program, while sustaining the following programs: IMRL, engine, and in-service repairs support and modifications of aircraft in the RDT&E inventory. Required Depot-Level maintenance deferred to FY00 will be accomplished. AVDLR support is provided for overhead flight hours, with RDTE projects funding those AVDLR costs associated with project flight hours. Operation and implementation of maintenance and material management programs at Naval Air Warfare Center activities will continue.

**R-1 Line Item 143  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE:** February 1999

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605863N**      **PROJECT NUMBER: W0569**  
**PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support**      **PROJECT TITLE: RDT&E Aircraft Support**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	25,281	33,872	33,798
(U) Appropriated Value:	24,964	33,872	
(U) Adjustments from Pres Budget:	-317	-1,526	-5,117
(U) FY2000 President's Budget Submit:	24,964	32,346	28,681

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 decrease consists of \$285 thousand for other Navy priorities and \$32 thousand for Small Business Innovation Research (SBIR) assessment. FY 1999 decrease consists of \$1,526 thousand for Congressional reductions. FY 2000 decrease consists of \$3,620 thousand for program rebalancing, \$1,207 thousand for pricing adjustments, \$290 thousand for other Navy priorities.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY:** Not applicable

**(U) D. ACQUISITION STRATEGY:** Not applicable.

**(U) E. SCHEDULE PROFILE:** Not applicable.

**R-1 Line Item 143**  
**UNCLASSIFIED**

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6  
PROJECT NUMBER: W0569  
PROJECT TITLE: RDT&E AIRCRAFT SUPPORT

PROGRAM ELEMENT: 0605863N

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
AVDLR	WX	NTWL Pax River MD NTWP Pt Mugu CA NRL Pax River MD	233,137	12,689	1 Oct 98	10,769	1 Oct 99	CONT.	CONT.	CONT.
AIRCRAFT REWORK (SDLM, PDM, IMC)	WX	NADEPs Cherry Pt NC Jacksonville FL North Island San Diego CA	54,540	11,819	1 Oct 98	10,835	1 Oct 99	CONT.	CONT.	CONT.
ENGINES	WX, WR,MP	NADEPs Cherry Pt NC Jacksonville FA North Island San Diego CA Other DoD Activities	27,525	3,857	1 Oct 98	3,075	1 Oct 99	CONT.	CONT.	CONT.
IN - SERVICE REPAIRS	WX	NADEPs Cherry Pt NC Jacksonville FL North Island San Diego CA	10,549	1,545	1 Oct 98	1,580	1 Oct 99	CONT.	CONT.	CONT.

R-1 Line Item 143  
UNCLASSIFIED



# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER: W0569

PROJECT TITLE: RDT&E AIRCRAFT SUPPORT

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2000</u>		<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Date</u>	<u>Award Date</u>	<u>Cost</u>	<u>Cost</u>	<u>Date</u>			
SFTIP	WX	NTWL Pax River MD	13,413	1,133	1 Oct 98	1 Oct 99	1,202		1 Oct 99	CONT.	CONT.	
MISC: All other efforts less than \$1.0M (Aggregate Total)	WX	NTWL Pax River MD NTWP Pt Mugu CA NRL Pax Riv MD NAVAIR 5.0D	14,376	588	1 Oct 98	1 Oct 99	453		1 Oct 99	CONT.	CONT.	
<b>Subtotal Project Development</b>			<b>353,540</b>	<b>31,631</b>			<b>27,914</b>			<b>CONT.</b>	<b>CONT.</b>	

**Remarks:** This ongoing program has existed since prior to 1975. Detailed execution data is not available prior to 1990 for AVDLR, SFTIP, Misc (IMRL, Contractor Services, Travel, etc.) nor is it available prior to 1992 for Aircraft Rework, Engines & In-Service Repairs. The total Prior Years Cost reflect execution data from 1990/1992 respectively.

R-1 Line Item 143  
UNCLASSIFIED

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

Date: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER: W0569

PROJECT TITLE: RDT&E Aircraft Support

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
------------------	------------------------	--------------------------------	----------------------	--------------	--------------------	--------------	--------------------	------------------	------------	--------------------------

Subtotal Support: Not Applicable.

Remarks

Subtotal Test & Evaluation  
Not Applicable

Remarks:

MISC	WX	Various	4,148	442		506				
Travel	WX	Various	1,800	250		261				
						0				
Subtotal Management			5,948	692		767				

SBIR Assessment

Remarks:

Total Cost	359,488	32,346	28,681	CONT.	CONT.
------------	---------	--------	--------	-------	-------

R-1 Line Item 143  
UNCLASSIFIED

**UNCLASSIFIED**  
**EXHIBIT R-2, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROGRAM ELEMENT TITLE:**

**TEST AND EVALUATION SUPPORT**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W0541 ATLANTIC UNDERSEA TEST AND EVALUATION CENTER (AUTC)	41,709	46,357	47,571	47,495	49,116	50,254	51,013	53,206	CONT.	CONT.
W0566 NAVAIR ENVIRONMENTAL COMPLIANCE**	4,568	4,561	4,856	4,496	4,375	4,479	4,553	4,755	CONT.	CONT.
W0653 NAVAL AIR WARFARE CENTER WEAPONS DIVISION	113,638	119,797	125,692	125,426	131,613	132,674	134,582	139,650	CONT.	CONT.
W0654 NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION	66,959	71,074	92,873	94,477	98,025	99,546	101,768	106,763	CONT.	CONT.
W2426 SAFETY AND SURVIVABILITY	944	0	0	0	0	0	0	0		
W2653 MAN OVERBOARD INDICATOR	0	998	0	0	0	0	0	0		
<b>TOTAL</b>	<b>227,818</b>	<b>242,787</b>	<b>270,992</b>	<b>271,894</b>	<b>283,129</b>	<b>286,953</b>	<b>291,916</b>	<b>304,374</b>	<b>CONT.</b>	<b>CONT.</b>

\*\* PRIOR TO FY2000 FUNDING FOR PROJECT W0566 WAS RESIDENT IN PE 0605862N

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides institutional maintenance and operational support for: The Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCENT DET AUTC), Andros Island, Bahamas; the Naval Air Systems Command Environmental Compliance effort; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point Mugu and China Lake, CA; the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), and Patuxent River, MD; the Congressionally mandated Safety and Survivability and Man Overboard Indicator Programs. The Test and Evaluation (T&E) activities make up the Navy portion of the Department of Defense's Major Range and Test Facility Bases (MRTFB). These activities are chartered to perform T&E for the development and acquisition of

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET ITEM JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT:**

**0605864N**

**PROGRAM ELEMENT TITLE:**

**TEST AND EVALUATION SUPPORT**

technologically advanced weapons systems. Core T&E capabilities and capacity are operated to obtain weapons system performance documentation for acquisition program milestone decisions to provide operational forces with effective weapons systems. This project supports acquisition programs and fleet support by keeping customers' cost low and, at the same time, keeping required T&E facilities, instrumentation and other resources in place. By providing the Navy Acquisition Program Managers the test capabilities required when needed this project removes the cost and schedule impact of providing their own T&E resources and retains the physical airspace, land space, and sea space needed to conduct testing.

**R-1 Line Item 144  
UNCLASSIFIED**

**UNCLASSIFIED**  
**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0541**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support**      **PROJECT TITLE: Atlantic Undersea Test and Evaluation Center**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W0541 Atlantic Test and Evaluation Center (AUTEC)										
<b>TOTAL</b>	41,709	46,357	47,571	47,495	49,116	50,254	51,013	53,206	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This continuing project provides maintenance and operations support for the Atlantic Undersea Test and Evaluation Center (AUTEC), a deep water Test and Evaluation (T&E) facility for collecting selected underwater, surface and air tracking data on test participants. NAVUNSEAWARCEN DET AUTEC, Andros Island, Bahamas, includes the Weapons Range, Fleet Operational Readiness Accuracy Check Site, Weapons Acoustic Measurement Capability and an Ocean Haul Down Facility for large buoyant bodies. The Weapons Range provides three-dimensional (undersea, surface, and air) precision tracking capability in support of Anti-Submarine Warfare Development trials. The Fleet Operational Readiness Accuracy Check Site provides the capability to accurately calibrate and align electronic optical, acoustic, and navigational systems installed on submarines, surface ships and helicopters. The NAVUNSEAWARCEN DET AUTEC at West Palm Beach, Florida provides technical expertise in tracking systems, liaison and test planning with range users, test scheduling, and logistic support.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$21,419) Continued to maintain and operate core Major Range Test and Facility Base (MRTFB) capabilities to meet customers' test workload. Continued to operate and maintain the physical plant, essential technical test support instrumentation, marine craft, and critical spares inventory. Supported only priority maintenance and repair efforts. Performed contract oversight and administration support on the AUTEC maintenance and operational support contract.
- (U) (\$10,800) Continued rental payments to the Bahamian government for use of land and ocean in the Bahamas and lease payments to General Services Administration (GSA) for facilities at West Palm Beach, FL.
- (U) (\$9,490) Continued civilian pay, travel, utilities, aircraft/ship/miscellaneous petroleum, oil and lubricants (POL), supply, communication, transportation and general and administrative efforts required to maintain and operate AUTEC resources and capabilities.

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROJECT NUMBER: W0541**

**PROGRAM ELEMENT TITLE: Test and Evaluation Support**

**PROJECT TITLE: Atlantic Undersea Test  
and Evaluation Center**

**2. FY 1999 PLAN:**

- (U) (\$25,241) Continue to operate and maintain core test support resources, instrumentation systems, and marine craft required to perform AUTECH's mission. Replenish spares inventory to minimum levels. Increase the level of maintenance and repair efforts to perform high priority items deferred from previous years. Perform contract oversight and administrative support on the AUTECH maintenance and operational support contract.
- (U) (\$10,875) Continue rental payments to the Bahamian government for use of land and ocean in the Bahamas and lease payments to GSA for facilities at West Palm Beach, FL.
- (U) (\$10,018) Continue civilian pay, travel, utilities, aircraft/ship/miscellaneous POL, supply, communications, transportation and general and administrative efforts required to maintain and operate AUTECH resources and capabilities.
- (U) (\$223) Portion of extramural program reserved for Small Business Innovative Research assessment in accordance with 15 USC 638.

**3. FY 2000 PLAN:**

- (U) (\$26,028) Continue to operate and maintain core test support assets, instrumentation systems, and marine craft required to perform AUTECH mission. Because of inflationary increases for contract labor and materials, will support priority maintenance and repair efforts, with some decrease in other maintenance and repair efforts, except those which impact personnel or equipment. Perform contract oversight and administrative support on the AUTECH maintenance and operational support contract.
- (U) (\$10,960) Continue rental payments to the Bahamian government for use of land and ocean in the Bahamas and lease payments to GSA for facilities at West Palm Beach, FL.
- (U) (\$10,583) Continue civilian pay, travel, utilities, aircraft/ship/miscellaneous POL, supply, communications, and general and administrative efforts required to maintain and operate AUTECH resources and capabilities.

**R-1 Line Item 144  
UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0541**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support**      **PROJECT TITLE: Atlantic Undersea Test and Evaluation Center**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	41,959	47,538	48,319
(U) Appropriated Value:	41,709	47,538	
(U) Adjustments from Pres Budget:	-250	-1181	-748
(U) FY 2000 President's Budget Submit:	41,709	46,357	47,571

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 reflects a decrease of \$250 thousand for the Small Business Innovation Research (SBIR) reduction. FY 1999 reflects decreases of \$1,044 thousand for a Congressional reduction related to RDT&E infrastructure and support, and \$137 thousand for Congressional undistributed reductions. FY 2000 reflects decreases of \$284 thousand for pricing adjustments and \$464 thousand for other Navy priorities.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY. Not Applicable.**

Related RDT&E

(U) P.E. 0604759, Major T&E Investment

(U) P.E. 0605862, RDT&E Instrumentation Modernization

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

(U) E. SCHEDULE PROFILE: Not Applicable.

**R-1 Line Item 144**  
**UNCLASSIFIED**

# UNCLASSIFIED

BUDGET ACTIVITY: 6      EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS      DATE: February 1999

PROGRAM ELEMENT: 0605864N      PROJECT NUMBER: W0541      PROJECT TITLE: Atlantic Undersea Test and Evaluation Center

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2000		Target Value
			Cost	Award Date	Cost	Award Date	Cost	Contract	
RX	NAVFAAC	140,700	10,050	10/98	10,050	10/99	Cont.	N/A.	
WX	AUTEC	712,631		10/98		10/99			
		2,400	2,472		2,546				
a. Civilian Pay		425	445		470				
b. Travel		2,100	2,205		2,315				
c. Transportation		125	130		135				
d. Communications		475	523		575				
e. Aircraft POL		85	94		103				
f. Ships POL		1,540	1,617		1,698				
g. Supplies		1,500	1,650		1,815				
h. Other POL		840	882		926				
i. G&A Expense		750	825		910				
j. WPB Facility Rental		21,419	25,241		26,028				
k. Other Purchased Services									
		884,990	46,134		47,571		Cont.	N/A	
Subtotal Project Development									

Remarks: FY 1998 decreases in funds required AUTEC to support only priority maintenance and repair items (deferring all other maintenance and repair efforts), and reducing the spare and all repair parts inventory FY 1999 increase in funds is intended to alleviate 3 years of deferred maintenance efforts and backlog of overhauls.

Subtotal Support	0	0	0	0
Remarks:				
Subtotal Test & Evaluation	0	0	0	0
Subtotal Management	0	0	0	0
SBIR Assessment		223		
Remarks:				
Total Cost	843,281	46,357	47,571	Cont

## R-1 Line Item 144 UNCLASSIFIED



**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0566**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support**      **PROJECT TITLE: NAVAIR Environmental Compliance**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0566 NAVAIR Environmental Compliance										
<b>TOTAL</b>	<b>4,568**</b>	<b>4,561**</b>	<b>4,856</b>	<b>4,496</b>	<b>4,375</b>	<b>4,479</b>	<b>4,553</b>	<b>4,755</b>	<b>CONT.</b>	<b>CONT.</b>

**\*\* Project W0566 previously funded in PE 0605862N**

Quantity of RDT&E Articles

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This continuing project supports environmental compliance and pollution prevention related efforts at the Navy Major Range Test Facility Bases (MRTFB) located at Patuxent River, MD, China Lake, CA, Point Mugu, CA, and Atlantic Undersea Test and Evaluation Center (AUTC), Bahamas. The Navy MRTFB environmental projects include ongoing efforts to comply with Federal, State, and local environmental requirements. Beginning in FY 2000, this project transfers from Program Element 0605862N, RDT&E,N Instrumentation Modernization.

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- (U) (\$4,568) Performed dust abatement at China Lake's Area R, underground storage tank (UST) remediations and replacements at Patuxent River and AUTC, and conversions of Class I ozone depleting substance (ODS) air conditioning and refrigeration equipment at all sites. Completed cultural resource studies at China Lake. Continued endangered species inventories at Point Mugu and Polychlorinated Biphenyl (PCB) contaminated transformer removal at China Lake. (Project transferred from PE 0605862N.)

**2. FY 1999 PLAN:**

- (U) (\$4,561) Remove and dispose PCB contaminated transformers at China Lake and Patuxent River. Continue UST remediations at Patuxent River and AUTC. Continue conversions of Class I ODS air conditioning and refrigeration equipment at China Lake and Point Mugu. Continue endangered species inventories and initiate remediation efforts at Point Mugu. Design and build a fire containment system in Burro Canyon at China Lake. (Project transferred from PE 0605862N.)

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0566**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support**      **PROJECT TITLE: NAVAIR Environmental Compliance**

**3. FY 2000 PLAN:**

- (U) (\$4,856) Close a fuel tank and begin a UST remediation at AUTEC. Continue the removal and disposal of PCB contaminated items at China Lake and Patuxent River. Continue UST remediations at Patuxent River. Construct an oily waste/waste oil (OW/WO) management/recycle facility at China Lake. Replace refrigeration systems at China Lake's SKYTOP test area. Perform air transport study at Point Mugu.

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	4,623	4,572	4,696
(U) Appropriated Value:	4,623	4,572	
(U) Adjustments from Pres Budget:	-55	-11	+160
(U) FY 2000/2001 President's Budget Submit:	4,568	4,561	4,856

**CHANGE SUMMARY EXPLANATION:**

- (U) Funding: Project transferred from PE 0605862N. FY 1998 decrease of \$55 thousand is due to a minor program adjustment. FY 1999 reflects a decrease of \$11 thousand for Revised Congressional undistributed reductions. FY 2000 reflects increases of \$250 thousand to support the air transport study at Point Mugu; offset by decreases of \$48 thousand for other Navy priorities, and \$42 thousand for pricing adjustments.

**R-1 Line Item 144**  
**UNCLASSIFIED**

UNCLASSIFIED

EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W0566

PROGRAM ELEMENT TITLE: Test and Evaluation Support

PROJECT TITLE: NAVAIR Environmental

Compliance

(U) PROGRAM CHANGE SUMMARY (continued)

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

Related RDT&E

(U) P.E. 0604759N, Major Test and Evaluation Investment

(U) P.E. 0605864N, Test and Evaluation Support

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

(U) E. SCHEDULE PROFILE: Not Applicable.

R-1 Line Item 144  
UNCLASSIFIED

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W0566

PROJECT TITLE: AIR ENVIRONMENTAL COMPLIANCE

<u>Cost Categories:</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
a. Environmental Efforts	WX	AUTEC, Bahamas	3,108	395	10/98	470	10/99	CONT.	CONT.	N/A
b. Environmental Efforts	WX	NAS Patuxent River, Maryland	13,006	1,491	10/98	1,360	10/99	CONT.	CONT.	N/A
c. Environmental Efforts	WX	NAWS China Lake, California	12,277	1,420	10/98	1,380	10/99	CONT.	CONT.	N/A
d. Environmental Efforts	WX	NAWS Point Mugu, California	10,560	1,255	10/98	1,646	10/99	CONT.	CONT.	N/A

## Subtotal Project Development

38,951 4,561 4,856 CONT. CONT. CONT.

Remarks Project transferred to PE 0605864N for FY 2000 and outyears.

## Subtotal Support

0 0 0 0 0 0

Remarks

Not applicable.

R-1 Line Item 144  
UNCLASSIFIED

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W0566  
PROJECT TITLE: NAVAIR  
ENVIRONMENTAL COMPLIANCE

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
				Cost	Date	Cost	Date				
Subtotal Test & Evaluation			0	0		0			0	0	
Remarks											
Not applicable.											
Subtotal Management			0	0		0			0	0	
Remarks											
Not applicable.											
Total Cost			38,951	4,561		4,856			CONT.	CONT.	

R-1 Line Item 144  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W0653

PROGRAM ELEMENT TITLE: Test and Evaluation Support

PROJECT TITLE: Naval Air Warfare Center Weapons Division

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0653 Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV)										
TOTAL	113,638	119,797	125,692	125,426	131,613	132,674	134,582	139,650	CONT.	CONT.
Quantity of RDT&E Articles										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This continuing project provides maintenance and operational support for the NAVAIRWARCENWPNDIV Pacific Ranges consisting of China Lake Land Ranges and the Point Mugu Sea Range. The Pacific Ranges use China Lake's 1.1 million acres of land and 17,000 square miles of military restricted (R-2508) airspace together with Point Mugu's 125,000 square miles of instrumented sea range and 36,000 square miles of controlled overlying airspace; a neighboring deep draft port facility at Port Hueneme, and the offshore airfield and test instrumentation at Sea Range to perform its Test and Evaluation mission. The Point Mugu Sea Range has unique sea, mountain, and instrumented offshore islands, as well as the interconnectivity needed to support large complex operations. The China Lake air ranges contain unique terrain features, and are instrumented for both low level and high altitude missile and weapon system testing. The Electronic Combat Range (ECR) at China Lake provides outdoor free space development and operational testing of airborne electronic warfare (EW) systems and tactics against shipboard and land site air defense systems over a land range of 700 square miles. These ranges perform metric radar, multilateration and optical tracking of test objects; command, control, and destruct for range safety purposes; communications; frequency interference control and analysis; collection processing and display of telemetered data; real-time data processing and display; and the operation of full scale aerial target launch capability. Other test capabilities include a static Radar Cross Section (RCS) measurement facility; propulsion, warhead, environmental, rocket motor, and other missile component test facilities; parachute/weapon recovery system test facilities; gun ranges; and weapon system survivability. This project also supports the R-2508 Air Space Control System, annual lease for offshore islands, remote location instrumentation sites, and Host Tenant Agreement costs.

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. FY 1998 ACCOMPLISHMENTS:

- (U) (\$61,527) Operated core MRTFB capabilities required to meet acquisition program and fleet test workload. Supported indirect civilian salary and contractor costs required to manage, operate, and maintain Pacific Ranges' Sea, Air, Ground, Electronic Combat, Propulsion, Warhead, and Environmental test facilities, operational target vehicle launch functions and aircraft maintenance. Supported critical elements of Naval Air Weapons Station MRTFB functions, including air operations and Public Works vehicle transportation costs. Budgeted level allows customer assessments to be consistent with the Department of Defense (DoD) customer charging policy for such services as parachute systems testing, weapons handling and storage, Junction Ranch RCS ranges, the track functions, and utilization of the sea and air ground ranges.

R-1 Line Item 144  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROGRAM ELEMENT TITLE: Test and Evaluation Support**

**PROJECT NUMBER: W0653**

**PROJECT TITLE: Naval Air Warfare Center  
Weapons Division**

- (U) (\$4,968) Continued to support priority equipment calibration, materials, supplies, technical equipment and spare parts for core range and target instrumentation and equipment systems. Budgeted level allows for standard customer charging for technical supplies and equipment used/expended in the tests utilizing parachutes, weapons handling and storage, Junction Ranch RCS ranges and track functions. In addition, investments for spare parts and technical consumables will be accomplished to maintain a reliable inventory of test instrumentation.
- (U) (\$3,988) Provided essential transportation, printing, communications, annual leases for offshore island and remote location instrumentation sites, Host Tenant Agreement costs, critical training necessary to manage and sustain MRTFB operations, and critical travel funding required to attend mission related meetings and to ensure greater cross-site efficiency for operation.
- (U) (\$4,595) Continued to provide MRTFB Real Property Maintenance Activities (RPMA) funding for mission critical emergency call services, road maintenance, and system maintenance to meet customer requirements.
- (U) (\$3,948) Continued essential support for maintaining R-2508 Air Space Control System and DC-130 target air launch capabilities.
- (U) (\$34,612) Continued to provide for annual utility costs, facility service contracts, workers' compensation costs for MRTFB employees, and contribution to Command's G&A expenses for comptroller, contracting, personnel, and other support services. Funded \$6.6M of NAWCWD FY 1998 costs with FY 1997 funds from Issue 63783. The \$6.6M in FY 1997 funds was used to offset G&A actual charges of \$41,212.

**2. FY 1999 PLAN:**

- (U) (\$58,924) Operate core MRTFB capabilities required to meet acquisition program and fleet test workload. Support essential components of indirect civilian salary and contractor costs required to manage, operate, and maintain Pacific Ranges' Sea, Air, Ground, Electronic Combat, Propulsion, Warhead, and Environmental test facilities, operational target vehicle launch functions and aircraft maintenance. Support San Nicolas Island T&E related operational costs. Reimburse the Pacific Fleet for support services including Public Works vehicle transportation costs at Point Mugu.
- (U) (\$4,351) Continue to support priority equipment calibration, materials, supplies, technical equipment and spare parts for core range and target instrumentation and equipment systems.

**R-1 Line Item 144  
UNCLASSIFIED**

**UNCLASSIFIED**  
**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROJECT NUMBER: W0653**

**PROGRAM ELEMENT TITLE: Test and Evaluation Support**

**PROJECT TITLE: Naval Air Warfare Center  
Weapons Division**

- (U) (\$3,843) Provide transportation, printing, communications, annual leases for offshore island and remote location instrumentation sites, Host Tenant Agreement costs, travel and critical training necessary to manage and sustain MRTFB operations.
- (U) (\$6,644) Continue MRTFB RPMA funding for mission emergency call services, road maintenance and system maintenance. Increased funding levels will allow a phased in preventive maintenance plan for San Nicolas Island, and other major repairs and minor construction to meet customer requirements. Reimburse the Pacific Fleet for maintenance and repair of non-mission critical facilities at Point Mugu.
- (U) (\$4,067) Continue essential support for maintaining R-2508 Air Space Control System and DC-130 target air launch capabilities.
- (U) (\$41,968) Continue annual utility costs, facility service contracts, workers' compensation costs for MRTFB employees, and contribution to Command's G&A expenses for comptroller, contracting, personnel, and other support services. Reimburse the Pacific Fleet for utilities and overhead support at Point Mugu.

**3. FY 2000 PLAN:**

- (U) (\$64,744) Operate core MRTFB capabilities required to meet acquisition program and fleet test workload. Support essential components of indirect civilian salary and contractor costs required to manage, operate, and maintain Pacific Ranges' Sea, Air, Ground, Electronic Combat, Propulsion, Warhead, and Environmental test facilities, operational target vehicle launch functions and aircraft maintenance. Support all San Nicolas Island T&E related operational costs. Reimburse the Pacific Fleet for support services including Public Works vehicle transportation costs at Point Mugu. Increased funding level will cover costs of maintenance and operation contracts including Saint Nicholas Island barge costs and shuttle service.
- (U) (\$4,342) Continue to support priority equipment calibration, materials, supplies, technical equipment and spare parts for core range and target instrumentation and equipment systems.
- (U) (\$3,856) Provide transportation, printing, communications, annual leases for offshore island and remote location instrumentation sites, Host Tenant Agreement costs, travel and critical training necessary to manage and sustain MRTFB operations.

**R-1 Line Item 144**  
**UNCLASSIFIED**



**UNCLASSIFIED**  
**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROGRAM ELEMENT TITLE: Test and Evaluation Support**

**PROJECT NUMBER: W0653**

**PROJECT TITLE: Naval Air Warfare Center  
Weapons Division**

- (U) (\$8,058) Continue MRTFB RPMA funding for mission emergency call services, road maintenance and system maintenance. Increased funding levels allows a phased in preventive maintenance plan for San Nicolas Island, and other major repairs and minor construction to meet customer requirements. Reimburse the Pacific Fleet for maintenance and repair of non-mission critical facilities at Point Mugu.
- (U) (\$4,067) Continue essential support for maintaining R-2508 Air Space Control System and DC-130 target air launch capabilities.
- (U) (\$40,625) Continue annual utility costs, facility service contracts, worker's compensation costs for MRTFB employees, and contribution to Command's G&A expenses for comptroller, contracting, personnel, and other support services. Reimburse the Pacific Fleet for utilities and overhead support at Point Mugu.

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	126,149	129,917	138,446
(U) Appropriated Value:	119,085	129,917	
(U) Adjustments from Pres Budget:	-12,511	-10,120	-12,754
(U) FY 2000 President's Budget Submit:	113,638	119,797	125,692

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 reflects decreases of \$7000 thousand due to an above threshold reprogramming adjustment (costs funded with \$6.6M of FY97 dollars); \$5,418 thousand for a comparability adjustment which moves funding to P.E. 0605863N to fund pilot proficiency costs; and \$93 thousand for minor program adjustments. FY 1999 reflects decreases of \$6,840 thousand for the pilot proficiency comparability adjustment; \$2,900 thousand for FY 1999 Congressional reductions related to RDT&E,N infrastructure support costs and \$380 thousand for Congressional undistributed adjustment. FY 2000 reflects decreases of \$6,400 thousand for realignment of Pilot Proficiency flying cost to P.E. 0605863N, \$4,046 thousand for Major Range Test Facility Base (MRTFB) realignment to project W0654, \$1,229 thousand for other Navy priorities and \$1,079 thousand for pricing adjustments.

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**  
**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

<b>BUDGET ACTIVITY: 6</b>	<b>PROGRAM ELEMENT: 0605864N</b>	<b>PROJECT NUMBER: W0653</b>
	<b>PROGRAM ELEMENT TITLE: Test and Evaluation Support</b>	<b>PROJECT TITLE: Naval Air Warfare Center Weapons Division</b>

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

Related RDT&E

(U) P.E. 0604759N, Major T&E Investment

(U) P.E. 0605862N, RDT&E Instrumentation Modernization

(U) P.E. 0604256N, Threat Simulator Development

(U) P.E. 0604258N, Target Systems Development

(U) P.E. 0605863N, RDT&E,N Ship and Aircraft Support

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

( ) E. SCHEDULE PROFILE: Not Applicable.

**R-1 Line Item 144**  
**UNCLASSIFIED**

# UNCLASSIFIED

## EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W0653

PROJECT TITLE: Naval Air Warfare Center Weapons Division

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Cost to Complete	Total Cost	Target Value of Contract
			FY 1999 Cost	Award Date 10/98	FY 2000 Cost	Award Date 10/99			
WX	NAWCWD	2,646,374	43,958		45,072		Cont	Cont	
1. Civilian Pay			3,048		3,064		Cont	Cont	
2. Travel/Transportation/Comm/Printing			4,434		4,508		Cont	Cont	
3. Utilities/Leases			4,398		5,520		Cont	Cont	
4. Equipment Maintenance			15,398		19,026		Cont	Cont	
5. Range Ops/Support (Purchased Ser)			6,644		8,058		Cont	Cont	
6. Facility Repairs/Minor Construction			4,077		4,019		Cont	Cont	
7. Supplies/Equipment			37,840		36,425		Cont	Cont	
8. General and Administrative									

### Subtotal Product Development

2,646,374 119,797 125,692 Cont

Remarks: Difference between FY 1999 and 2000 in Range Ops is the additional operational and maintenance support (including upgrades) of the San Nicolas Island facilities.

### Subtotal Test & Evaluation

0 0 0 0 0 0

Remarks:

### Subtotal Management

0 0 0 0 0 0

Remarks:

### Total Cost

2,646,374 119,797 125,692 Cont

R-1 Line Item 144  
UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0654**  
**PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT**      **PROJECT TITLE: Naval Air Warfare Center Aircraft Division**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0654 Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV)	66,959	71,074	92,873	94,477	98,025	99,546	101,768	106,763	CONT.	CONT.
<b>TOTAL</b>										

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This continuing project provides funds for the maintenance and operation of the NAVAIRWARCENACDIV's capabilities to conduct test and evaluation and provide fleet support for air platforms. NAVAIRWARCENACDIV has extensive airfield, flight test ranges, aircraft systems test facilities and simulation laboratories to support aircraft RDT&E. This includes 50,000 square miles of airspace, 39,375 square miles of sea space, and 7,950 square acres of land space. Product areas include aircraft systems flight test and evaluation, carrier suitability certification, test article preparation, installed system test and evaluation, and modeling and simulation support of the acquisition process. The T&E Group, Patuxent River, performs development test and evaluation and supports operational test and evaluation of manned and unmanned air vehicle systems, including mission systems, equipment, subsystems, components, and support systems. This project also provides test and evaluation facilities for air-breathing propulsion systems, and extensive facilities for conducting both installed and uninstalled aircraft engine development and test and evaluation. This project also funds costs not chargeable to customers.

**( U ) PROGRAM ACCOMPLISHMENTS AND PLANS:**

1. FY 1998 ACCOMPLISHMENTS:
  - (U) (\$20,449) Continued to operate and maintain mission core/essential Major Range Test Facility Base (MRTFB) capabilities to meet customers' test workload. Supported essential elements of civilian labor required to manage, operate, and maintain the MRTFB.
  - (U) (\$8,761) Continued to provide essential travel, transportation, collateral equipment, and supplies required to support the MRTFB. Continued payment of worker's compensation cost for MRTFB employees.

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROJECT NUMBER: W0654**

**PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT**      **PROJECT TITLE: Naval Air Warfare Center Aircraft Division**

- (U) (\$11,421) Continued to provide communications, purchased equipment maintenance, printing and reproduction, and purchased service contracts necessary to manage and sustain MRTFB operations.
  - (U) (\$7,148) Continued maintenance and repair of MRTFB facilities.
  - (U) (\$1,702) Provided minor construction and major repair for essential MRTFB capabilities.
  - (U) (\$11,410) Reimbursed the Command for essential General and Administrative (G&A) support services, (e.g., comptroller, contracting, personnel, and other services). Funded \$8.5M of NAWCAD FY 1998 costs with FY 1997 funds based on an above threshold reprogramming (ATR). The \$8.5M in FY 1997 funds was used to offset G&A actual charges of \$20,134.
  - (U) (\$6,068) Continued to provide mission essential annual utility costs, equipment rentals, and land, building, and facility leases.
2. FY 1999 PLAN:
- (U) (\$21,540) Operate and maintain mission essential/core MRTFB capabilities to meet customer test workload. Support essential elements of civilian labor required to manage, operate, and maintain the MRTFB.
  - (U) (\$5,792) Continue to provide travel, transportation, collateral equipment, and supplies required to support continued operations of the MRTFB. Decrease in funding levels attributable to closure of Trenton, NJ.
  - (U) (\$12,828) Continue communications, purchased equipment maintenance, printing and reproduction, and increased cost of purchased service contracts necessary to manage and sustain MRTFB operations. The increase in purchased service costs is the direct result of Navy Comptroller and OSD policy to fully fund the institutional costs of the MRTFB.
  - (U) (\$6,701) Continue maintenance and repair of MRTFB facilities.
  - (U) (\$261) Provide minor construction and major repair to essential MRTFB capabilities. Decrease in this element based on NAWCAD management decision to postpone major repair and minor construction efforts into FY 2000.

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROJECT NUMBER: W0654**

**PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT**      **PROJECT TITLE: Naval Air Warfare Center Aircraft Division**

- (U) (\$19,779) Reimburse the Command for essential G&A support services, (e.g., comptroller, contracting, personnel, and other services). Difference between FY 1998 and FY 1999 levels due to funding \$8.5M FY98 cost with FY97 funds.
  - (U) (\$4,173) Continue to provide mission essential annual utility costs, equipment rentals, and land, building, and facility leases. Decrease in funding level attributable to closure of Trenton, NJ.
- 3. FY 2000 PLAN:**
- (U) (\$23,736) Operate and maintain mission essential/core MRTFB capabilities to meet customer test workload. Support essential elements of civilian labor required to manage, operate, and maintain the MRTFB.
  - (U) (\$6,377) Provide travel, transportation, collateral equipment, and supplies required to support continued operations of the MRTFB.
  - (U) (\$23,977) Continue to provide communications, purchased equipment maintenance, printing and reproduction, and purchased service contracts necessary to manage and sustain MRTFB operations. Increase in this item is the direct result of Issue 63222 to fully fund institutional costs.
  - (U) (\$8,157) Continue maintenance and repair of MRTFB facilities.
  - (U) (\$3,750) Provide minor construction and major repair to essential MRTFB capabilities. Budget increased to reduce backlog of maintenance and repair items postponed from FY 1999, and to sustain operational capabilities.
  - (U) (\$22,630) Reimburse the Command for essential G&A support services, (e.g., comptroller, contracting, personnel, and other services).
  - (U) (\$4,246) Continue to provide mission essential annual utility costs, equipment rentals, and land, building, and facility leases.

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0654**  
**PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT**      **PROJECT TITLE: Naval Air Warfare Center Aircraft Division**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	86,530	83,146	88,427
(U) Appropriated Value:	77,339	83,146	
(U) Adjustments from Pres Budget:	-19,571	-12,072	+4,446
(U) FY 2000 President's Budget Submit:	66,959	71,074	92,873

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 reflects decreases of \$10,380 for a comparability adjustment realigning pilot proficiency costs to P.E. 0605863N; \$9,000 thousand for MRTFB reprogramming adjustment as the result of Congressional action (expenses were covered with \$8.5M of FY 1997 funds), and \$191 thousand for the Small Business Innovative Research (SBIR) assessment. FY 1999 reflects decreases of \$9,977 for the pilot proficiency comparability adjustment; \$1,856 thousand for a specific Congressional reduction related to RDT&E,N infrastructure and support costs; and \$239 thousand for Congressional undistributed reductions. FY 2000 reflects decreases of \$10,400 thousand for realignment of Pilot Proficiency flying cost to P.E. 0605863N, \$807 thousand for other Navy priorities, and \$937 thousand for pricing adjustments. These reductions are offset by increases of \$4,046 thousand due to a realignment from MRTFB project W0653, and \$12,544 thousand to fully fund MRTFB institutional costs.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

Related RDT&E

(U) P.E. 0604759N, Major T&E Investment

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**

**PROGRAM ELEMENT: 0605864N**

**PROJECT NUMBER: W0654**

**PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT**

**PROJECT TITLE: Naval Air Warfare Center**

**Aircraft Division**

(U) P.E. 0605862N, RDT&E Instrumentation Modernization

(U) P.E. 0605863N, RDT&E,N Ship and Aircraft Support

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

(U) E. SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 144  
UNCLASSIFIED**



# UNCLASSIFIED

**BUDGET ACTIVITY: 6**      **EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS**      **DATE: FEBRUARY 1999**  
**PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W0654**      **PROJECT TITLE: NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION**

<u>Cost Categories:</u>	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2000		Target	
				Cost	Award Date	Cost	Award Date	Cost	Complete	Value of Contract	Value of Contract
	WX	NAWCAD	1,720,733		10/98		10/99		CONT.	CONT.	CONT.
a. Civilian Pay				21,540		23,726					
b. Travel/Transportation/Comm/Printing				1,099		958					
c. Utilities/Leases				4,173		4,246					
d. Equipment Maintenance				3,986		4,697					
e. Range Ops/Support (Purchased Ser)				8,508		19,150					
f. Facility Repairs/Minor Construction				6,962		11,907					
g. Supplies/Equipment				5,027		5,559					
h. General and Administrative				19,779		22,630					
<b>Subtotal Project Development</b>			<b>1,720,733</b>	<b>71,074</b>		<b>92,873</b>		<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>

**Remarks:** Difference between FY 1999 and FY 2000 in Range Ops/Support cost category based on the direct result of the Navy Comptroller's action to abide by OSD direction to fully fund institutional costs and a slight increase in engineering support and technical maintenance support contracts costs.

<b>Subtotal Support</b>	0	0	0	0	0	0	0	0	0	0	0
<b>Remarks:</b>											
<b>Subtotal Test &amp; Evaluation</b>	0	0	0	0	0	0	0	0	0	0	0
<b>Remarks:</b>											
<b>Subtotal Management</b>	0	0	0	0	0	0	0	0	0	0	0
<b>Remarks:</b>											
<b>Total Cost</b>	<b>1,720,733</b>	<b>71,074</b>	<b>92,873</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>	<b>CONT.</b>

## R-1 Line Item 144 UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W2426**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support**      **PROJECT TITLE: Safety and Survivability**

**(U) COST: (Dollars in Thousands)**

<u>Project Number &amp; Title</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W2426 Safety and Survivability	944	0	0	0	0	0	0	0	0	944

Quantity of RDT&E Articles

**(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project provides funds for examining Commercial off-the-shelf (COTS) and Non-Developmental Items (NDI) enabling system safety solutions and to expedite their introduction into service use for safety and survivability.

**(U) PROGRAM ACCOMPLISHMENTS AND PLANS:**

**1. FY 1998 ACCOMPLISHMENTS:**

- (U) (\$944) Supported the Congressionally mandated Non-Developmental Safety and Survivability program. Implemented hardware solutions for Health usage Monitoring system (HUMS), Computer Aided Debriefing systems (CADS) crew coordination, Virtual Retinal Display (VRD), Parachute High Altitude Virtual Reality Simulation, Video Recording Prototype (VVR), Mobile Aircraft Fire Fighting Training Device (MAFTD) upgrade, ICE VEST upgrades to eliminate chronic heat exposure and applied for Fleet usage. These solutions provided a quantum leap in safety and survivability protection for both Rotary Wing and Fixed Wing/Navy/Marine aircraft that provide key operational support in forward deployment, sealift, surveillance, power projection and force sustainment.

**R-1 Line Item 144**  
**UNCLASSIFIED**

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605864N      PROJECT NUMBER: W2426**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support      PROJECT TITLE: Safety and Survivability**

**(U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	971	0	0
(U) Appropriated Value:	944		
(U) Adjustments from Pres Budget:	-27	0	0
(U) FY 2000 President's Budget Submit:	944	0	0

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1998 reflects a decrease of \$27 thousand for the Small Business Innovation Research (SBIR) reduction.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

**(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable**

**(U) D. ACQUISITION STRATEGY: Not applicable.**

**(U) E. SCHEDULE PROFILE: Not applicable.**

**R-1 Line Item 144  
UNCLASSIFIED**

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605864N PROJECT NUMBER: W2426 PROJECT TITLE: Safety And Survivability

<u>Cost Categories:</u>	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Cost to Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date			

Safety and Survivability

944 0 0 0

Remarks:

Subtotal Support

944 0 0 0 0 0

Remarks:

Subtotal Test & Evaluation

0 0 0 0 0 0

Remarks:

Subtotal Management

0 0 0 0 0 0

Remarks:

Total Cost

944 0 0 0 0 0

R-1 Line Item 144  
UNCLASSIFIED

# UNCLASSIFIED

## EXHIBIT R-2a, FY 2000 PRESIDENT'S RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605864N      PROJECT NUMBER: W2653  
 PROGRAM ELEMENT TITLE: Test and Evaluation Support      PROJECT TITLE: Man Overboard Indicator Program

(U) COST: (Dollars in Thousands)

<u>Project Number &amp; Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2653 - Man Overboard Indicator Program	0	998	0	0	0	0	0	0	0	998

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the evaluation of commercially available Man Overboard Indicator technology to determine the feasibility of using the personal monitoring/tracking systems for Navy personnel aboard Navy ships.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 PLAN:

- (U) (\$974) Procure, evaluate, and test state-of-the-art technology for man overboard indicator monitoring/tracking systems and emergency pocket size transmitters for use by flight deck personnel aboard Navy ships; including monitoring the wearer's physical conditions and environment, mark ground proximity information, define thermal operating ranges, and establish water resistance parameters.
- (U) (\$24) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

R-1 Line Item 144  
 UNCLASSIFIED

**UNCLASSIFIED**

**EXHIBIT R-2a, FY 2000 PRESIDENT'S RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**

**DATE: FEBRUARY 1999**

**BUDGET ACTIVITY: 6**      **PROGRAM ELEMENT: 0605864N**      **PROJECT NUMBER: W2653**  
**PROGRAM ELEMENT TITLE: Test and Evaluation Support**      **PROJECT TITLE: Man Overboard Indicator Program**

**U) B. PROGRAM CHANGE SUMMARY**

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	0	0	0
(U) Appropriated Value:	0	1,000	
(U) Adjustments from Pres Budget:	0	-2	0
(U) FY 2000 President's Budget Submit:		998	0

**CHANGE SUMMARY EXPLANATION:**

(U) Funding: FY 1999 reflects a Congressional Add of \$1,000 thousand for the Man Overboard Indicator Program and a decrease of \$2 thousand for a Congressional undistributed reduction.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

**R-1 Line Item 144**  
**UNCLASSIFIED**

# UNCLASSIFIED

EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: FEBRUARY: 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W2653

PROJECT TITLE: Man Over Board Indicator Program

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date		

Man Overboard Indicator Efforts

974

0

N/A  
N/A

Remarks:

Subtotal Support

0 974

0 0

Remarks:

Subtotal Test & Evaluation

0 0

0 0

Remarks:

Subtotal Management

0 0

0 0

Remarks:

SBIR Assessment

24

Total Cost

0 998

0 0

R-1 Line Item 144  
UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605865N

PROGRAM ELEMENT TITLE: Operational Test and Evaluation Capability

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL
R0831 Operational Test and Evaluation Force Support	8,723	9,054	9,172	9,020	9,238	9,321	9,475	9,867	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element provides Commander, Operational Test and Evaluation Force (COMOPTEVFOR) general support funding. This funding ensures COMOPTEVFOR's compliance with requirements established by Title 10 Law and directives from the Secretary of Defense and the Secretary of the Navy to carry out independent operational testing and evaluation. This funding is used for planning, conduct (including early operational tester involvement as part of acquisition reform), and reporting of the results of operational test and evaluation of weapon systems projects and for tactics validation for the use of those systems.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

R-1 Line Item 145

Budget Item Justification  
(Exhibit R-2, page 1 of 3)

# UNCLASSIFIED



# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605865N

PROJECT NUMBER: R0831

PROGRAM ELEMENT TITLE: Operational Test and Evaluation Capability

PROJECT TITLE: Operational Test and Evaluation Force Support

## 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$6,537) Operationally tested and evaluated CNO projects commensurate with authorized funding level.
- (U) (\$2,186) Maintained level of effort associated with the DOD 5000 acquisition guidance which requires increased COMOPTEVFOR involvement in early operational assessments, developmental testing, advanced concept technology, demonstrations (ACTD), and advanced technology demonstrations (ATD).

## 2. (U) FY 1999 PLAN:

- (U) (\$6,737) Operationally test and evaluate CNO projects commensurate with authorized funding level.
- (U) (\$2,298) Maintain level of effort associated with the DOD 5000 acquisition guidance which requires increased COMOPTEVFOR involvement in early operational assessments, developmental testing, ACTD, ATD.
- (U) (\$19) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

## 3. (U) FY 2000 PLAN:

- (U) (\$6,854) Operationally test and evaluate CNO projects commensurate with authorized funding level.
- (U) (\$2,318) Maintain level of effort associated with the DOD 5000 acquisition guidance which requires increased COMOPTEVFOR involvement in early operational assessments, developmental testing, ACTD, and ATD.

## B. (U) PROGRAM CHANGE SUMMARY:

(U) FY 1999 President's Budget:	FY 1998	FY 1999	FY 2000
	8,773	9,194	9,468
(U) Appropriated Value:	0	9,194	-
(U) Adjustments from FY 1999 PRESBUDG:	-50	-140	-296
(U) FY 2000 President's Submission:	8,723	9,054	9,172

R-1 Line Item 145

Budget Item Justification  
(Exhibit R-2, page 2 of 3)

# UNCLASSIFIED

# UNCLASSIFIED

FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605865N  
PROGRAM ELEMENT TITLE: Operational Test and Evaluation Capability

PROJECT NUMBER: R0831  
PROJECT TITLE: Operational Test and Evaluation Force Support

## (U) CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 adjustment is due to SBIR (-21), update to reflect actual execution (-29). FY 1999 adjustment is due to Economic Assumption (-21), CAAS (-118), and CIVPERS (-1). FY 2000 adjustment is due to program rebalance (-195), NWCF Rates (+1), Non Pay Inflation (-133) and CIVPERS (+31).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 145

Budget Item Justification  
(Exhibit R-2, page 3 of 3)

# UNCLASSIFIED

## UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-2, RDT&amp;E,N Budget Item Justification

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605866N

PROGRAM ELEMENT TITLE: Navy Space and Electronic Warfare (SEW) Support

(U) COST: (Dollars in Thousands)

PROJECT NUMBER TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL
R0739 Navy C4I Top Level Requirements 915	1,606	780	1,627	1,677	1,691	1,727	1,764	CONT.	CONT.	
X0706 EMI Reduction and Radio Frequency Management 1,480	1,860	1,656	1,733	1,852	1,828	1,891	1,994	CONT.	CONT.	
Total	2,395	3,466	2,436	3,360	3,529	3,519	3,618	3,758	CONT.	CONT.

## (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project R0739 Navy C4I Top Level Requirements - Analyzes fleet requirements and research and development technology to develop top level plans for operating Navy Communications, Command and Control Computers, and Intelligence (C4I) and space systems in the Space and Electronic Warfare (SEW) mission area.

Project X0706 Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management - Develops advanced technology to identify and reduce EMI sources from Navy systems and platforms.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

R-1 Shopping List - Item No 146-1 of 146-11

UNCLASSIFIED

Exhibit R-2, RDT&amp;E,N Budget Item Justification

UNCLASSIFIED  
**FY 2000 President's Budget Estimates**  
 EXHIBIT R-2a, RDT&E,N Project Justification

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605866N      PROJECT NUMBER: R0739      DATE: February 1999  
 PROGRAM ELEMENT TITLE: SEW Support      PROJECT TITLE: Navy C4I Top Level Requirements

(U) COST: (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TOTAL PROGRAM
R0739	915	1,606	780	1,627	1,677	1,691	1,727	1,764	CONT.
Navy Command, Control, Communications, Computers and Intelligence (C4I) Top Level Requirements									

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides analysis of fleet requirements and research and development technology to develop top level plans for operating Navy Communications, C4I and space systems in the Space and Electronic Warfare mission area.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$66) Analyzed and developed new educational requirements associated with development of an Information Warfare Professional Program with its associated restructured Naval Postgraduate School curricula and restructuring of subspecialty program database.
- (U) (\$99) Analyzed and identified C4ISR parameters of greatest payoff in strike operations effectiveness.
- (U) (\$140) Conducted study and developed System Operational manual for the Global Broadcast System.
- (U) (\$124) Conducted study and developed methodology for sorting through the various emerging commercial satellite communications systems to determine which is the most cost-effective.
- (U) (\$104) Analyzed and assessed the need for, and built a prototype, of a real-time processing Common Operating Environment kernel.
- (U) (\$128) Conducted study and developed a long-term (also referred to as a roadmap) for the development of a single architecture to provide pre-mission planning support and real time information and replanning capability to the warfighter.
- (U) (\$108) Analyzed and determined effects of employing Complementary Technology and Complementary Processing would have on the speed and efficiency of data processing and system performance.

UNCLASSIFIED

FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605866N

PROGRAM ELEMENT TITLE: SEW Support

PROJECT NUMBER: R0739

PROJECT TITLE: Navy C4I Top Level Requirements

- (U) (\$146) Identified Theater Medical Information Program maritime alternatives for shipboard telemedicine with performance thresholds and objectives. Convened IPT to achieve requirement consensus among CNO, CINCPACFLT, CINCLANTFLT, and Medical staffs.

2. (U) FY 1999 PLAN:

D. (U) SCHEDULE PROFILE: Not applicable.

- (U) (\$130) Identification and quantification of the effects of operator training quality on Tactical Data Link (TADIL) systems operational effectiveness.
- (U) (\$115) Develop and maintain a cadre of personnel with specialized educations and focused experience as information warriors. Builds on success of FY 98 effort with tracking system to ensure personnel distribution of IW professionals is matched to their abilities.
- (U) (\$127) Identify and evaluate tools that can enhance the effectiveness of the average shipboard LAN administrator.
- (U) (\$83) Redesign of a system to combine the Mobile Ashore Support Terminal (MAST) and Mobile Integrated Command Facility (MICFAC) capabilities.
- (U) (\$166) Study and plan for the magnitude of the requirements and robust applications which emerged during the FY 98 study of the Naval Warfare Mission Planning Roadmap. Builds on 98 study by further defining the scope of the problem and ensuring a joint interoperability.
- (U) (\$190) Determine requirements for mobile user communications for the year 2007 and examine advanced system concepts to ascertain the most cost-effective way to meet the requirements.
- (U) (\$428) Assess the commercial SATCOM industry with an eye toward engaging the commercial SATCOM industry to take advantage of developments in commercial technology, influence commercial designs, and develop an acquisition strategy that builds the "Best Business case" for the Navy.
- (U) (\$85) Identify those C4ISR components which have the greatest effect on overall Navy strike operational success and to use these results to identify candidate programs for new or enhanced RDTEEN support. Provides extensive modeling and analysis to support contentions provided by 98 effort.
- (U) (\$150) Assess and quantify, within the Revolution in Business Affairs (RBA) framework, how becoming a Network Centric Navy enables efficiencies from process and organizational changes.

R-1 Shopping List - Item No 146-3 of 146-11

UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (Project R0739)

UNCLASSIFIED

FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605866N      PROJECT NUMBER: R0739  
 PROGRAM ELEMENT TITLE: SEW Support      PROJECT TITLE: Navy C4I Top Level Requirements

- (U) (\$100) Study the utility of redundancies in communications paths, and describe their use in terms of the importance of the information exchange requirement.
- (U) (\$32) Portion of extramural program reserved for Small Business Innovative Research assessment in accordance with 15 USC 638.
- 3. (U) FY 2000 PLAN:
- (U) (\$331) Identify programs and actions to improve networking of C4I systems, including configuration management for both hardware and software, enhanced security, and dynamic network management services.
- (U) (\$295) Strategize overall planning/mapping/design for outsourced service packages offered for the Department of the Navy.
- (U) (\$154) Enable modeling paradigm demonstration in a joint environment.

B. (U) PROGRAM CHANGE SUMMARY:

	FY 1998	FY 1999	FY 2000
1. (U) FY 1999 President's Budget:	950	1,611	1,617
(U) Appropriated Value:	0	1,611	0
(U) Adjustments from FY 1999 PRESBUDG:	-35	-5	-837
(U) FY 2000 President's Submission:	915	1,606	780

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 adjustment is due to SBIR assessment (-24) and minor adjustment (-11). The FY 1999 adjustment is due to Revised Economic Assessment (-4) and CIVPERS (-1). The FY 2000 adjustment is due to C4I RDT&E,N expenditure carryover (-836), NWCf rate adjustment (+8), CIVPERS (+2) and Non Pay Inflation (-11).

(U) Schedule: Not applicable.

R-1 Shopping List - Item No 146-4 of 146-11

UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (Project R0739)

UNCLASSIFIED

FY 2000 President's Budget Estimates

EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

PROJECT NUMBER: R0739  
PROJECT TITLE: Navy C4I Top Level Requirements

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605866N  
PROGRAM ELEMENT TITLE: SEW Support

(U) Technical: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E: Not applicable.

R-1 Shopping List - Item No 146-5 of 146-11

UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (Project R0739)

UNCLASSIFIED  
**FY 2000 President's Budget Estimates**  
 EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605866N      PROJECT NUMBER: X0706  
 PROGRAM ELEMENT TITLE: SEW Support      PROJECT TITLE: EMI Reduction and Radio Frequency Management

(U) COST: (Dollars in Thousands)

PROJECT NUMBER TITLE	FY 1998 ACTUAL	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL
X0706 EMI Reduction and Radio Frequency Management	1,480	1,860	1,656	1,733	1,852	1,828	1,891	1,994	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management. This project develops tools to identify and reduce EMI sources from Navy systems and platforms. There are several tools under development to identify and reduce EMI through proper use of the electromagnetic spectrum. The Battle Force (BF) EMI Evaluation System (BEES) is a computer-aided force-level EMI evaluation tool that is used to develop BF Electromagnetic Environmental Effects (E3) policy for naval operations in the joint arena and fosters national and international inter-platform EM compatibility (EMC) during operations and exercises. The Automated Spectrum Planning, Engineering, Coordination, and Tracking System (ASPECTS) is a computer-aided force-level communications planning and frequency management tool that is used to plan communication links, and analyze, allocate, and assign communication and radar frequencies for fleet operations. The Waveform Recording and Playback System (WRAPS) is a unique E3 testing system to be used to measure degradation of system performance due to EMI. The waveform of a potential interfering system is recorded; the recording can then be played back at a variety of test sites to evaluate the vulnerability of other systems to this waveform. Research includes advanced technology chamber (ATC), shielding effectiveness of composite materials, application of fiber optics to signal cables to eliminate EMI, and coherent measurements and development of E3 testing criteria/procedures.



UNCLASSIFIED  
FY 2000 President's Budget Estimates  
EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605866N      PROJECT NUMBER: X0706  
PROGRAM ELEMENT TITLE: SEW Support      PROJECT TITLE: EMI Reduction and Radio  
Frequency Management

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$603) ASPECTS: Expanded frequency assignment algorithms for EMCAP. Began development of ASPECTS and EMCAP software updates. Completed Electromagnetic Environment (EME) monitoring transition study and real-time frequency management software development. Completed development of E3 information network software bridges to multiple databases. Completed development of E3 Information Network Software bridges.
- (U) (\$578) BEES: Began development of generic and specific electronic-communication system models. Continued incorporation of Decision Trees into BEES to model operational decisions in response to EMI degradation.
- (U) (\$299) Criteria and Test Procedures: Continued to investigate industrial standards for conversion to military standards, where appropriate. Incorporated Coherent Measurement Techniques for E3 test criteria.

2. (U) 1999 PLAN:

- (U) (\$745) ASPECTS: Complete development of capability to receive real-time recordings of the EME to be used in frequency management. Continue ASPECTS and EMCAP software updates. Continue real-time frequency management software development.
- (U) (\$835) BEES: Continue development of generic and specific electronic-communication system models. Apply conditional logic to selected additional models to replicate operational decision making as it relates to E3.
- (U) (\$280) Criteria and Test Procedures: Continue to investigate industrial standards (foreign and domestic) for conversion to military standards. Continue to incorporate Coherent Measurement Techniques into E3 test criteria.

R-1 Shopping List - Item No 146-7 of 146-11

UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (Project X0706)

UNCLASSIFIED  
FY 2000 President's Budget Estimates  
EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605866N

PROJECT NUMBER: X0706

PROGRAM ELEMENT TITLE: SEW Support

PROJECT TITLE: EMI Reduction and Radio  
Frequency Management

3. (U) 2000 PLAN:

- (U) (\$662) ASPECTS: Complete development of capability to receive real-time recordings of the EME to be used in frequency management. Continue ASPECTS and EMCAP software updates. Continue real-time frequency management software development.
- (U) (\$745) BEES: Continue development of generic and specific electronic-communication system models. Apply conditional logic to selected additional models to replicate operational decision making as it relates to E3.
- (U) (\$249) Criteria and Test Procedures: Continue to investigate industrial standards (foreign and domestic) for conversion to military standards. Continue to incorporate Coherent Measurement Techniques into E3 test criteria.

R-1 Shopping List - Item No 146-8 of 146-11

UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (Project X0706)

UNCLASSIFIED

FY 2000 President's Budget Estimates  
EXHIBIT R-2a, RDT&E,N Project Justification

DATE: February 1999

BUDGET ACTIVITY: 6      PROGRAM ELEMENT: 0605866N      PROJECT NUMBER: X0706  
PROGRAM ELEMENT TITLE: SEW Support      PROJECT TITLE: EMI Reduction and Radio  
Frequency Management

B. (U) PROGRAM CHANGE SUMMARY:

FY 1998: \$-32K: SBIR Reduction. \$-59K: BTRs.

FY 1999: \$-4K: Revised Economic Assumptions. \$-2K: BTR.

FY 2000: \$1,005K: Realignment of EMI OPN funding to RDT&E. \$13K: NWCf Rates. \$-61K: BTRs.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Shopping List - Item No 146-9 of 146-11

UNCLASSIFIED

Exhibit R-2a, RDT&E,N Project Justification (Project X0706)

UNCLASSIFIED

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&amp;E,N Project Cost Analysis

DATE: February 1999

PROGRAM ELEMENT: 0605866N

PROJECT NUMBER: X0706

BUDGET ACTIVITY: 6

Exhibit R-3 Cost Analysis (page 1)											Date:
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NAME AND NUMBER			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY's Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal Product Development											
Remarks:											
ASPECTS/EMCAP Development	Various	Various	3433	745	TBD	662	TBD	Cont.	Cont.	Cont.	
E3 Analysis Tool Development	Various	Various	3291	835	TBD	745	TBD	Cont.	Cont.	Cont.	
Specifications and Standards	Various	Various	1703	280	TBD	249	TBD	Cont.	Cont.	Cont.	
Subtotal Support			8427	1860		1656		Cont.	Cont.	Cont.	
Remarks											

R-1 Shopping List - Item No 146-10 of 146-11

UNCLASSIFIED

Exhibit R-3, RDT&amp;E,N Project Cost Analysis

## FY 2000 President's Budget Estimates

EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: February 1999

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605866N

PROJECT NUMBER: X0706

[illegible]

R-1 Shopping List - Item No 146-11 of 146-11

UNCLASSIFIED

Exhibit R-3, RDT&amp;E, N Project Cost Analysis

Exhibit R-2, RDT&E Budget Item Justification										Date: January 1999			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				Space and Electronic Warfare Surveillance/ Reconnaissance Support					
RDT&E,N Activity 6				Program Element (PE) Name and No. 0605867									
COST (\$ in Millions)				FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	Cost to Complete	Total Cost
Total PE Cost				10.316	16.103	12.121	14.014	14.256	14.600	14.919	15.446	CONT	CONT
Z1034 Tac Sat Recon Ofc				9.455	14.912	10.528	12.414	12.625	12.911	13.195	13.487	CONT	CONT
R2007 Space Management Support				.861	1.191	1.593	1.600	1.631	1.689	1.724	1.959	CONT	CONT
Project C Name/No. & subtotal cost													
Quantity of RDT&E Articles													
<p>(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Established to exploit all National and Selected Service sensor systems to improve tactical support to fleet operational commanders. Project also supports fleet exercises, which provide the venue for testing modifications to existing programs and being made aware of new requirements. Additional detailed information is available at a higher level of classification.</p> <p>(U) Z1034: Established to exploit all National and Service sensor systems to improve tactical support to fleet operational commanders. Project also supports fleet exercises, which provide the venue for testing modifications to existing programs and being made aware of new requirements.</p>													
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 1998 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>• (U) (\$ .284) Joint Exercises/Training</li> <li>• (U) (\$ 1.329) Support to Theater Ballistic Missile Defense</li> <li>• (U) (\$ 3.318) Support to Littoral/Expeditionary Warfare</li> <li>• (U) (\$ 3.576) Precision Strike/Mission Planning</li> <li>• (U) (\$ .948) Improved Data Dissemination/Exploitation</li> </ul> <p>2. (U) FY 1999 PLAN:</p> <ul style="list-style-type: none"> <li>• (U) (\$ .359) Joint Exercises/Training</li> <li>• (U) (\$ 1.798) Support to TBMD</li> <li>• (U) (\$ 4.196) Support to Littoral/Expeditionary Warfare</li> <li>• (U) (\$ 4.360) Precision Strike/Mission Planning</li> <li>• (U) (\$ 1.199) Improved Data Dissemination/Exploitation</li> <li>• (U) (\$ 3.000) Global C4ISR Visualization (GCIV) (Congressional Addition)</li> </ul>													

## 3. (U) FY 2000 PLAN:

- (U) (\$ .320) Joint Exercises/Training
- (U) (\$1.601) Support to TBMD
- (U) (\$3.589) Support to Littoral/Expeditionary Warfare
- (U) (\$3.953) Precision Strike/Mission Planning
- (U) (\$1.065) Improved Data Dissemination/Exploitation

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides resources to the Naval Space Command (NAVSPACECOM) for the conduct of its support testing. NAVSPACECOM is tasked with providing space support to fleet units worldwide, while also planning and coordinating future support system analysis, requirements, architectural and feasibility studies, technical demonstrations and prototype system development for future concepts to provide space support to the fleet warfighter.

(U) R2007: The project provides resources to the Naval Space Command (NAVSPACECOM) for the conduct of its support testing.

## (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

## 1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$1.113) Demonstrated advanced processing techniques using RESIC/Hyper Spectral Imagery (HSI) data
- (U) (\$1.150) Investigated targeting of specific emitters using National systems
- (U) (\$2.200) Demonstrated application of new processing against orbit predictions
- (U) (\$2.235) Applied parallel processing techniques to space processes
- (U) (\$2.045) Completed MILSATCOM application research
- (U) (\$1.118) Investigated Cooperative Engagement Capabilities integrated to Theater Ballistic Missile (TBM) information

## 2. (U) FY 1999 PLAN:

- (U) (\$1.189) Prototype output interfaces for RESIC/HSI data
- (U) (\$2.050) Develop low data rate SATCOM alternatives
- (U) (\$2.150) Demonstrate real-time application of National systems data
- (U) (\$2.200) Integrate TBM warning data into Joint Tactical Ground Stations environment
- (U) (\$2.130) Demonstrate Kalman filtering against low orbit data
- (U) (\$2.281) Investigate numerically intensive database applications in space control context

Exhibit R-2, RDT&E Budget Item Justification		Date: January 1999
3.	(U) (\$1.168) Analyze the process used to resolve Uncorrelated Targets (UCTs) within the NAVSPACCOM mission system	<p>(U) (\$0.023) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p>
	(U) (\$0.023) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.	
3.	FY 2000 PLAN:	
	<ul style="list-style-type: none"> <li>(U) (\$0.400) Develop Hyper Spectral Imagery production techniques</li> <li>(U) (\$0.381) Integrate JTAGS into GCCS product delivery</li> <li>(U) (\$0.281) Demonstrate advanced processing on orbit analyst support</li> <li>(U) (\$0.181) Prototype Kalman Filtering against low orbit objects</li> <li>(U) (\$0.150) Study advanced space communications techniques</li> <li>(U) (\$0.200) Demonstrate National System data integration</li> </ul>	
(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Budget Activity 6 because it supports the operations and installations required for general research and development use.		
B. Program Change Summary:		
(U) Funding: R2007: FY 1998 adjustments are due to SBIR reduction (-30), and a Minor Adjustment (-1). FY1999 adjustments are due to Revised Economic Assumption (-3). FY2000 adjustments are for program adjustment (+400), and Navy Working Capital Fund Rates (NWCFF) (+3), Civilian Pay Rates (+1) and Non Pay Inflation (-23). Z1034: FY99 adjustments (-28) Economic Assumptions, (-10) Civilian Personnel Underexecution, (-41) FFRDC Distribution. FY2000 adjustments (-1.580) due to PY expenditure carryover (+13) Civilian Pay Rates, (-152) Non Pay Inflation, (-2) Working Capital.		
C. Other Program Funding Summary N/A		



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE		February 1999		
BUDGET ACTIVITY		PE NUMBER AND TITLE									
6 - Management Support		0605873M Marine Corps Program Wide Support									
COST (In Thousands)		FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		6188	12923	8198	8255	8194	8151	8811	9767	Continuing	Continuing
C0030 Marine Corps Studies and Analysis		3032	3174	4584	4876	5032	5181	5439	5556	Continuing	Continuing
C0033 Marine Corps Operational Testing & Evaluation Activity		2228	1990	2167	2129	2206	2208	2390	2444	Continuing	Continuing
C0073 Human Resources Management & Forecasting		1	0	0	0	0	0	0	0	0	1
C2330 Chemical Biological Consequence Management		927	7759	1447	1250	956	762	982	1767	Continuing	Continuing
Quantity of RDT&E Articles											

(U) Mission Description and Budget Item Justification: This program element (PE) provides the analytical foundation for the Marine Corps Studies System (MCSS), including mandated Mission Area Analyses (MAA) and Milestone I Analysis of Alternatives (AoA). The studies program is the front-end of the Marine Corps acquisition system supporting the Concepts Based Requirements System (CBRS) and the Combat Development Process (CDP). The PE also supports Milestone 0/Phase 0 activities, including market surveys, cost estimates and other activities required to baseline high priority emerging requirements, target programs include high priority requirements from the CDP, Marine Corps Warfighting Laboratory (MCWL), CMC/Defense Planning Guidance and other sources. Additionally, the PE supports the Marine Corps Operational Test and Evaluation (OT&E) Activities, and the Chemical Biological Consequence Management projects.

(U) Justification for Budget Activity: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

R-1 Line Item 148

Budget Item Justification

(Exhibit R-2, Page 1 of 10)

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1999
BUDGET ACTIVITY		PE NUMBER AND TITLE								PROJECT	
6 - Management Support		0605873M Marine Corps Program Wide Support								C0030	
	COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C0030	Marine Corps Studies and Analysis	3032	3174	4584	4876	5032	5181	5439	5556	Continuing	Continuing
	Quantity of RDT&E Articles										
<p><b>A. (U) <u>Mission Description and Budget Item Justification:</u></b></p> <p>(U) <b>MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> This project funds the general studies and analysis portion of the Marine Corps Studies System (MCSS) and provides the analytical foundation for the Marine Corps Studies System (MCSS). As such, the MCSS is the front end of the Marine Corps' acquisition system which supports the Concepts Based Requirements Process (CBRP) and the Combat Development Process (CDP). The project funds a variety of studies and analyses approved for execution in the annual Marine Corps Studies Master Plan (MCSMP) to include: mandated Mission Area Analyses (MAAs), Milestone I (Conceptual) Analysis of Alternatives (AoAs), technology assessments; force structure analysis; weapons systems analysis; concept development and analysis; cost benefit analysis; training assessments; feasibility analysis; scenario development; and other analyses in support of the Program Objective Memorandum (POM) initiatives. The Marine Corps restructured and prefocused its mission area analysis program in FY97 for implementation in FY98. This new MAA process is designed to provide quantitative and qualitative information to decisions makers on which to base decisions effecting improvements in operational concepts, doctrine, force structure, education, training, and procurement. The MCSS also provides analytical support for decision makers related to the resolution of current problems identified by the operating forces. Commencing in FY 2000, this project will also fund all Milestone 0/Phase 0 activities.</p> <p>(U) <b>FY 1998 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• (U) \$ 1,040 Implemented the new Marine Corps Mission Area Analysis involving the use of various models and simulations to evaluate concepts, doctrine, and current and projected force structures in a variety of scenarios to determine capabilities and to identify deficiencies. Initiated and completed three MAAs: the MAA for the Noncombatant Evaluation Operation (NEO) Scenario, MAA for the Major Regional Conflict Amphibious Assault Scenario, and the MAA for the Southwest Asia Halt Scenario.</li> <li>• (U) \$ 425 Continued and completed the Common Aviation Command and Control System (CAC2S) Analysis of Alternatives</li> <li>• (U) \$ 805 Continued 5 FY97 studies: Tactical Fuel Systems (1998-2010); Increased Simulation for Training; Updating USMC Multiservice Operational Evaluations (MOEs) for Sustainability; Quality of Life for USMC; and Processes and Methodologies for the Development, Alignment, Prioritization, and Review of Depot Maintenance Requirements. All of these studies were completed except for the Quality of Life study which is continued into FY99.</li> </ul>											
										R-1 Line Item 148	Budget Item Justification

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)			DATE	February 1999
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
6 - Management Support		0605873M Marine Corps Program Wide Support		C0030
• (U) \$ 762		Initiated four new studies: MV-22 Student Undergraduate Pipeline Training and Fleet Replacement Squadron; Revolution in Military Affairs (RMA) Workshop and Wargame IV; Implications of Co-Locating MV-22 Squadrons at MCAS Camp Pendleton; and the Impact to Warfighting Capability Through the MV-22 Transition. Two of these studies were completed this fiscal year: Implications of Co-Locating MV-22 Squadrons at Marine Corps Air Station (MCAS) Camp Pendleton; RMA Workshop and Wargame IV. Also provided general support (TAD, printing, supplies & material) in support of the studies and analyses conducted under the auspices of the MCSS.		
(U)Total \$ 3,032				
(U) FY 1999 Planned Program:				
• (U) \$ 1,091		Initiate and complete three new Mission Area Analyses: an MAA on a Small Scale Contingency for a Sea Lane of Communications (SLOC) Scenario; an MAA on Military Operations in Urban Terrain (MOUT); and an MAA on a Marine Expeditionary Force (MEF) in a Major Theater of War (MTW).		
• (U) \$ 478		Fund the continuation of 3 ongoing FY 1998 study and analysis projects: Quality of Life for USMC; MV-22 Student Undergraduate Pipeline Training and Fleet Replacement Squadron; and the Impact to Warfighting Capability Through the MV-22 Transition.		
• (U) \$ 223		Initiate an Analysis of Alternatives that is approved in the MCSMP.		
• (U) \$ 1258		Execute 5 to 7 high priority study and analysis projects approved in the FY 1999 MCSMP. Provide general support (TAD, printing, supplies & material) in support of studies conducted under the auspices of the MCSS.		
• (U) \$ 124		Portion of extramural program reserved for Small Business Innovation Research (SBIR) assessment in accordance with 15 USC 638.		
(U)Total \$ 3,174				
(U) FY 2000 Planned Program:				
• (U) \$ 1,135		Initiate and complete three new Mission Area Analyses. Specific MAAs to be addressed are normally identified during the MAA review during mid FY 1999.		
• (U) 872		Continue and complete one FY 1999 AoA and initiate 2 new AoAs. Estimate one of the new AoAs will be completed this fiscal year.		
• (U) \$ 996		Execute the high priority study and analysis projects approved in the FY 2000 MCSMP.		
• (U) \$ 894		Continue an estimated 3 to 4 ongoing FY 1999 study and analysis projects.		
• (U) \$ 687		Conduct high priority Milestone 0/Phase 0 activities for emerging requirements.		
(U)Total \$ 4,584				
B. (U) Project Change Summary				
(U) Previous President's Budget		FY 1998	FY 1999	FY 2000
(U) Adjustments from the PRESBUD		3400	3846	3952
		-368	-672	632
		R-1 Line Item 148		
		Budget Item Justification		

(Exhibit R-2, Page 3 of 10)

UNCLASSIFIED

**RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE \_\_\_\_\_

February 1999

## BUDGET ACTIVITY

PE NUMBER AND TITLE

## 6 - Management Support

**0605873M Marine Corps Program Wide Support**

## PROJECT

**C0030**

B. (U) Project Change Summary	FY 1998
(U) Current Budget Submit	3032

<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
3032	3174	4584

(U) Change Summary Explanation:

(U) Funding: FY98 decrease of \$264 thousand reflects offset to finance other USMC requirements and a decrease of \$104 reflects SBIR assessment. FY99 decrease is due to revised economic assumptions and general adjustments. FY00 increase of \$632 is due to increases to execute Milestone0/ study and analysis activities as adjusted by revised economic assumptions and general adjustments.

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

[illegible]

**(APPN, BLI #, NOMEN)**

(U) Not applicable

<u>Complete</u>	<u>Cost</u>
1.00	1.00
0.99	0.99
0.98	0.98
0.97	0.97
0.96	0.96
0.95	0.95
0.94	0.94
0.93	0.93
0.92	0.92
0.91	0.91
0.90	0.90
0.89	0.89
0.88	0.88
0.87	0.87
0.86	0.86
0.85	0.85
0.84	0.84
0.83	0.83
0.82	0.82
0.81	0.81
0.80	0.80
0.79	0.79
0.78	0.78
0.77	0.77
0.76	0.76
0.75	0.75
0.74	0.74
0.73	0.73
0.72	0.72
0.71	0.71
0.70	0.70
0.69	0.69
0.68	0.68
0.67	0.67
0.66	0.66
0.65	0.65
0.64	0.64
0.63	0.63
0.62	0.62
0.61	0.61
0.60	0.60
0.59	0.59
0.58	0.58
0.57	0.57
0.56	0.56
0.55	0.55
0.54	0.54
0.53	0.53
0.52	0.52
0.51	0.51
0.50	0.50
0.49	0.49
0.48	0.48
0.47	0.47
0.46	0.46
0.45	0.45
0.44	0.44
0.43	0.43
0.42	0.42
0.41	0.41
0.40	0.40
0.39	0.39
0.38	0.38
0.37	0.37
0.36	0.36
0.35	0.35
0.34	0.34
0.33	0.33
0.32	0.32
0.31	0.31
0.30	0.30
0.29	0.29
0.28	0.28
0.27	0.27
0.26	0.26
0.25	0.25
0.24	0.24
0.23	0.23
0.22	0.22
0.21	0.21
0.20	0.20
0.19	0.19
0.18	0.18
0.17	0.17
0.16	0.16
0.15	0.15
0.14	0.14
0.13	0.13
0.12	0.12
0.11	0.11
0.10	0.10
0.09	0.09
0.08	0.08
0.07	0.07
0.06	0.06
0.05	0.05
0.04	0.04
0.03	0.03
0.02	0.02
0.01	0.01
0.00	0.00

(U) Related RDT&E: PE 0605154N (Center for Naval Analyses (CNA)), Project C0031 (Marine Corps Operations Analysis Group)

**D. (U) Schedule Profile:** Not Applicable

**R-1 Line Item 148**

### Budget Item Justification

(Exhibit R-2, Page 4 of 10)

**UNCLASSIFIED**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	February 1999
BUDGET ACTIVITY										PROJECT	
PE NUMBER AND TITLE										C0033	
6 - Management Support										Marine Corps Program Wide Support	
COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
C0033 Marine Corps Operational Testing & Evaluation Activity	2228	1990	2167	2129	2206	2208	2390	2444	Continuing	Continuing	
Quantity of RDT&E Articles											

**A. (U) Mission Description and Budget Item Justification:** This program supports the Marine Corps Operational Test and Evaluation (OT&E) Activity (MCOTEA) representatives for Marine Corps OT&Es and OT&Es performed by Fleet Marine Force Commanders and Technical Support Activities. This program also provides for OT&E of systems prior to procurement by the Marine Corps to include test planning, operational testing, and Independent Evaluation Report (IER) preparation.

**(U) FY 1998 Accomplishments:**

- (U)\$ 763 MCOTEA: Provided for organizational salaries.
- (U)\$ 505 MCOTEA: Provided for organizational support and utilities.
- (U)\$ 263 Advanced Field Artillery Tactical Data System (AFATDS): Conducted initial operational assessment and test.
- (U)\$ 54 Tactical Air Operations Center (TAOC): Conducted IOT&E associated with multiple system (JTIDS) integration.
- (U)\$ 43 Team Portable Collection System (TPCS): Developed detailed test plan and began first phase of IOT&E.
- (U)\$ 25 Advanced Assault Vehicle Reliability, Availability, and Maintainability Rebuild to Standard (AAV RAM/RS): Developed detail test plans and collection data base.
- (U)\$ 179 Mobile Electronic Warfare Support System (MEWSS): Conducted MOT&E.
- (U)\$ 250 Medium Tactical Vehicle Replacement (MTVR): Completed initial operational assessment and test; published assessment evaluation report.
- (U)\$ 36 Tactical Data Network (TDN): Completed IER. Efforts concluded FY97 IOT&E.
- (U)\$ 10 Designated Marksman Rifle (DMR): Conducted IOT&E and published IER.
- (U)\$ 2 Advanced Driver Thermal Viewer (ADTV): Conducted IOT&E which began in late FY 97.
- (U)\$ 22 Marine Load System/Family of Body Armor (MLS/FBA): Conducted initial operational assessments and tests.
- (U)\$ 76 Tactical Electronic Reconnaissance Processing and Evaluation System Upgrade (TERPES Upgrade): Conducted IOT&E that incorporated JTIDS upgrade.

**(U)Total \$ 2,228**

R-1 Line Item 148

Budget Item Justification

(Exhibit R-2, Page 5 of 10)

UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE	February 1999																
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT																	
<b>6 - Management Support</b>		<b>0605873M Marine Corps Program Wide Support</b>																	
<p><b>(U) FY 1999 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• (U) \$ 827 MCOTEA: Provides for organizational salaries.</li> <li>• (U) \$ 375 MCOTEA: Provides for organizational support and utilities.</li> <li>• (U) \$ 425 Advanced Field Artillery Tactical Data System (AFATDS): Conduct IOT&amp;E and publish IER.</li> <li>• (U) \$ 134 Mobile Electronic Warfare Support System (MEWSS): Conclude MOT&amp;E and publish IER.</li> <li>• (U) \$ 49 Technical Control and Analysis Center (TCAC PIP): Conduct IOT&amp;E and publish IER.</li> <li>• (U) \$ 40 Team Portable Collection System (TPCS): Conduct IOT&amp;E and publish IER.</li> <li>• (U) \$ 40 AN/PSC 5 Manpack VHF Satcom Terminal (AN/PSC5): Conduct FOT&amp;E and publish IER.</li> <li>• (U) \$ 100 Portion of extramural program reserved for Small Business Innovation Research (SBIR) assessment in accordance with 15 USC 638.</li> </ul> <p><b>(U)Total \$ 1,990</b></p>																			
<p><b>(U) FY 2000 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• (U) \$ 1047 MCOTEA: Provides for organizational salaries.</li> <li>• (U) \$ 780 MCOTEA: Provides for organizational support and utilities.</li> <li>• (U) \$ 280 Medium Tactical Vehicle Replacement (MTVR): Conduct Initial Operational Assessment/Test.</li> <li>• (U) \$ 60 Light NBC Reconnaissance System (LNBCRS): Conduct and publish DTP for IOT&amp;E.</li> </ul> <p><b>(U)Total \$ 2,167</b></p>																			
<p><b>B. (U) Project Change Summary</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">FY 1998</th> <th style="width: 10%; text-align: center;">FY 1999</th> <th style="width: 10%; text-align: center;">FY 2000</th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">1920</td> <td style="text-align: center;">2009</td> <td style="text-align: center;">2286</td> </tr> <tr> <td>(U) Adjustments to Previous President's Budget</td> <td style="text-align: center;">+308</td> <td style="text-align: center;">-19</td> <td style="text-align: center;">-119</td> </tr> <tr> <td>(U) Current Budget Submit</td> <td style="text-align: center;">2228</td> <td style="text-align: center;">1990</td> <td style="text-align: center;">2167</td> </tr> </tbody> </table>					FY 1998	FY 1999	FY 2000	(U) Previous President's Budget	1920	2009	2286	(U) Adjustments to Previous President's Budget	+308	-19	-119	(U) Current Budget Submit	2228	1990	2167
	FY 1998	FY 1999	FY 2000																
(U) Previous President's Budget	1920	2009	2286																
(U) Adjustments to Previous President's Budget	+308	-19	-119																
(U) Current Budget Submit	2228	1990	2167																
<p>(U) Change Summary Explanation:</p> <p>(U) Funding: FY98 increase of \$736 thousand represents the realignment of funding to cover increase costs and efforts associated with the operational testing of programs and decreases in the amount of \$428 thousand reflect a SBIR transfer, a minor affordability adjustment and funding realignment to other Marine Corps programs. FY99 decreases reflects revised economic assumptions and general adjustments. FY00 decrease reflects revised economic assumptions and general adjustments and realignment of funds to other programs within the Marine Corps.</p>																			
R-1 Line Item 148		Budget Item Justification																	

## February 1999

PE NUMBER AND TITLE

**0605873M Marine Corps Program Wide Support**

**PROJECT**  
**C0033**

**Total Cost**

**D. (U) Schedule Profile:** Not Applicable.

### Budget Item Justification

**UNCLASSIFIED**

PROJECT										DATE									
BUDGET ACTIVITY										PROJECT									
6 - Management Support										C2330									
PE NUMBER AND TITLE										0605873M Marine Corps Program Wide Support									
COST (In Thousands)										FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2330 Chemical Biological Consequence Management										927	7759	1447	1250	956	762	982	1767	Continuing	Continuing
Quantity of RDT&E Articles																			
<p><b>A. (U) Mission Description and Budget Item Justification:</b> This project includes improvements in all areas of the Chemical Biological Incident Response Force inclusive to its commodity areas of reconnaissance, decontamination, emergency medical support, communications &amp; general support and force protection.</p> <p><b>(U) FY 1998 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• (U) \$ 927 Began industry development and government testing for prototype protective equipment, Nuclear Biological Chemical (NBC) Hand-Held Portable Detectors, Electrostatic Decontamination and Electrochemical Activation Decontamination Solution. Reliability, Adaptability and Maintainability and Durability (RAM-D) testing.</li> </ul> <p>(U)Total \$ 927</p> <p><b>(U) FY 1999 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• (U) \$ 625 Continue to develop Electrostatic Decontamination System that uses statically charged fog to provide chemical protection to personnel, buildings, terrain, and equipment.</li> <li>• (U) \$ 51 Begin development and test of Modified Protective Mask Drinking Tube.</li> <li>• (U) \$ 3405 Continue Development of Small Unit Biological Detector (SUBD).</li> <li>• (U) \$ 2919 Begin development and test of ChemBio Dosimeter.</li> <li>• (U) \$ 294 Complete development and test of NBC Hand-Held Portable Detector to provide a portable, contamination, radiation and chemical detector.</li> <li>• (U) \$ 288 Begin development of General Purpose Filters which are compatible with the standard M40 Canister to provide improved Toxic Industrial Chemicals (TIC) protection</li> <li>• (U) \$ 177 Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</li> </ul> <p>(U)Total \$ 7759</p>																			

Budget Item Justification

R-1 Line Item 148

(Exhibit R-2, Page 8 of 10)

UNCLASSIFIED



DATE		February 1999
BUDGET ACTIVITY	PE NUMBER AND TITLE	
<b>6 - Management Support</b>	<b>0605873M Marine Corps Program Wide Support</b>	
(U) FY 2000 Planned Program:		
• (U) \$ 50	Begin development of Phase Change Cooling garment to reduce heat stress during extended consequence management operations.	
• (U) \$ 150	Begin development of Improved Level A Communications to responders wearing OSHA Level A Protection.	
• (U) \$ 650	Continue development of Electrostatic Decontamination System.	
• (U) \$ 50	Begin development of Sensitive Equipment Decontamination for a portable capability.	
• (U) \$ 150	Begin development of a Casualty Tracking System to track and monitor the location, condition, and treatment of casualties at an incident site.	
• (U) \$ 175	Develop an improved Chemical Biological Database by integrating current collection of COTS hazard prediction and information software.	
• (U) \$ 193	Begin development of Multi-patient Medical Monitor to provide the capability to conduct mobile medical monitoring at multiple remote monitoring sites.	
• (U) \$ 29	Complete development and test of General Purpose Filters.	
(U)Total \$ 1,447		
B. (U) <u>Project Change Summary</u>		
	FY 1998	FY 1999
		FY 2000

